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Advisory Committee
Northern Development

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279C



1974 -75 Government Activities in the North

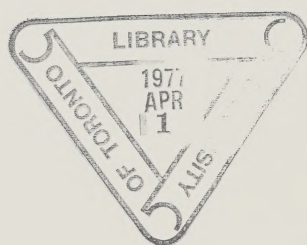


1974-1975 Government Activities in the North

1974-75 Report and 1975-76 Plans

Advisory Committee
on Northern Development

This report is also available
in French
Cette publication existe aussi
en version française



FOREWORD

Much of the material used under the headings "Plans for 1975-76" had to be assembled in the latter part of the fiscal year 1974-75. By the time this document is published, many of these plans will be *fait accompli*, others may have been severely modified or abandoned. It is not practicable to review constantly the status of these plans as publication of the book proceeds; consequently, they are treated throughout as being in the future.

MEMORANDUM FOR THE ADVISORY COMMITTEE ON NORTHERN DEVELOPMENT

Document ND 527

Government Activities in the North-1974-75
and Plans for 1975-76

On January 22, 1953, the Cabinet directed that the Advisory Committee on Northern Development report immediately and periodically thereafter on all phases of development in the Canadian North. The Committee agreed the report should be brought up to date on an annual basis.

This current report covers the activities of all federal departments and agencies operating in the Yukon and Northwest Territories for the fiscal year 1974-75 and outlines their plans for 1975-76.

Thanks to the cooperation of its many contributors, the report has increased in popularity and is widely used as a work of reference.

It is unclassified and copies can be obtained in either French or English by writing to the Information Services, Department of Indian Affairs and Northern Development, Ottawa, Ontario K1A 0H4.

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ADVISORY COMMITTEE ON NORTHERN DEVELOPMENT (ACND)

Responsibilities

To advise the government on policy relating to civilian and military undertakings in northern Canada and to provide for effective co-ordination of all government activities in that region.

Review of 1974-75

The Advisory Committee on Northern Development under the former Chairmanship of Mr. H.B. Robinson, and the present Chairmanship of Mr. A. Kroeger, Deputy Minister of the Department of Indian Affairs and Northern Development, established three new committees:

Advisory Committee on Canadian Content in Oil and Gas Operations on Canada Lands

Chairman: Mr. G.E. Hughes-Adams,
Department of Industry, Trade and Commerce.

Federal-Territorial Regional Planning Committee

Co-Chairmen: Mr. A.B. Yates,
Department of Indian Affairs and Northern Development.

Mr. L. Elkin,
Government of the Northwest Territories.

Mackenzie Delta Development Committee

Chairman: Mr. F.J. Joyce,
Department of Indian Affairs and Northern Development.

The following committees of ACND were active in 1974-75:

GENERAL COMMITTEE

(formerly Co-ordinating Committee)

Chairman: Mr. G.S. Murray,
Department of Indian Affairs and Northern Development.

Terms of Reference

- To propose specific programs for the development of the northern territories in order to co-ordinate these programs into a general plan;
- To consider and advise on all proposed programs and studies which may have a major bearing on the development of the northern territories;
- Where required, to establish *ad hoc* working groups to consider particular aspects of northern development; and
- To circulate relevant information and to advise senior officers of those departments and agencies with northern interests on those aspects of northern development discussed in committee.

Working Groups

Archaeological Salvage

EOS Project — Acronym for German Ice, Ocean, Ship

Financial Implications of the Northern Development Policy

Post-Operational Phase Dewline

Housing Accommodation

Strathcona Sound Project

Arvik Mine Project

COMMITTEE ON TRANSPORTATION

Chairman: Mr. M. Hagglund,
Ministry of Transport.

Terms of Reference

- To review, examine, and report on transportation requirements in all its forms for the northern territories.
- To submit both short and long-term plans for transportation in the North, including recommendations in which these shall be met.

Steering Group

Marine Transport

Working Groups

Haines-Fairbanks Oil Fuel Pipeline

Yukon Petroleum Prices

Eastern Arctic Resupply

Collapsible Containers

Air Policy Study

Economics of the Mackenzie Valley Highway Project

COMMITTEE ON SCIENCE AND TECHNOLOGY

Chairman: Dr. J.D. Keys,
National Research Council of Canada

Terms of Reference

- To discuss and exchange information on the research programs and projects, active or planned, of government and other agencies in northern Canada, and to consider the trends of northern research in other countries and their effect on Canadian programs;
- To release through the Advisory Committee on Northern Development, periodically, a list of all these research programs and projects including a forecast of any plans for future work, for the information of the Committee and other government agencies;
- To recommend to the Advisory Committee on Northern Development additional research when this is considered to be desirable;
- To assist, at the request of interested departments, in providing or improving upon transportation or other facilities needed to further research programs in the North;

- To consider the possibility of common use of the research facilities of government departments and agencies;
- To consider any other aspect of research in the Canadian North as may be referred to it by the Advisory Committee on Northern Development;
- To consider and advise on all federal research programs pertaining to the North, with the view that the programs be appropriately related to the Federal Government's overall development plans in the North.

Executive Group

Standing Committee on Research Projects
Task Force on Construction in Permafrost Regions

Working Groups

Canada-USSR Scientific Agreement (General Exchanges Agreement)

Scientific Guidelines for Federally-Sponsored Scientific Activities in Northern Canada

Scientific Facilities in the North
International Polar Organizations

Ad Hoc

Arctic Bibliographic Information System
Canada/U.K. Cooperation in Arctic Research

COMMITTEE ON NORTHERN COMMUNICATIONS

Chairman: Mr. de M. Marchand,
Department of Communications.

Terms of Reference

- To advise the government, through the Advisory Committee on Northern Development, on questions of policy relating to civilian and military communications undertakings in northern Canada;
- To provide for the effective co-ordination of all government communications activities in northern Canada including responsibility for making recommendations on priorities between competing government programs;
- To review and assess, where appropriate, on-going government communications programs in northern Canada to assist departments and agencies in meeting the objectives of the Policy for Northern Communications and the Northern Development Policy, 1971-1981;

- To initiate, where appropriate, studies to evaluate possible policy changes or new program developments in northern communication in order to keep pace with new technology, taking into account social and cultural concerns, and to ensure compatibility with changing northern needs.

Working Groups

Radio Broadcasting

Yukon Communications Study

COMMITTEE ON THE EMPLOYMENT OF NATIVE NORTHERNERS

Chairman: Mr. S.W. Hancock,
Government of the Northwest Territories.

Terms of Reference

- Review the nature of the requirement for factual data on the representation of Native Northerners in the northern work force; correlate the preparation of data currently being provided, and provide information, guidance and assistance in the development of procedures to meet current and future employment data requirements;
- Develop an overview of training programs, in effect to equip Native Northerners for employment opportunities, and make recommendations on new or modified programs that may be required to meet changing employment opportunities;
- Identify the legal, administrative and other impediments, where they exist, to the implementation of government objectives in the field of employment and economic opportunities for Native Northerners and make recommendations for their removal;
- Consider innovative approaches to the employment problems of Native Northerners, based on experience in Canadian and other jurisdictions;
- Encourage government departments and Crown agencies to undertake, either individually or jointly, special employment programs for Native Northerners;
- Ensure consultation with representative native organizations as a process in the development of employment programs.

Working Groups

Employment and Local Impact of the Mackenzie Highway Project

Aesthetic Pollution in the Arctic (*pro tem*)

ENVIRONMENTAL COMMITTEE OF THE MACKENZIE HIGHWAY

Chairman: Mr. L. Edgeworth,
Department of the Environment.

Terms of Reference

- To consider the environmental requirements for the Mackenzie Highway Project and to make recommendations for amendment, as thought necessary, and to approve them;
- To consider and make recommendations concerning the final alignment and construction standards of the Mackenzie Highway and to approve them from the environmental point of view;
- To consider other environmental aspects of the Mackenzie Highway Project as may be referred to the Committee by the Mackenzie Highway Committee from time to time either for the purpose of independent advice, or to consider an environmental question that has not been unanimously agreed to by the Mackenzie Highway Committee;
- To receive reports from the Mackenzie Highway Committee on the construction of the Mackenzie Highway with respect to environmental aspects and to make recommendations thereon;
- To consider and make recommendations to the Ministers concerned, through the Advisory Committee on Northern Development, on any environmental issues relating to the Mackenzie Highway which cannot be resolved with the Mackenzie Highway Committee.

FEDERAL-TERRITORIAL ECONOMIC PLANNING COMMITTEE

Chairman: Mr. A.D. Hunt,
Department of Indian Affairs and Northern Development.

Terms of Reference

- To establish guidelines for global and regional economic planning in the North to be undertaken by the Federal and Territorial Governments in accordance with the objectives and priorities in the Northern Policy;
- To ensure that there is an adequate information base on the North and matters affecting its development to enable governments to measure the impact of programs and to undertake the required economic planning;

To develop and initiate effective operations for the stimulation and support of sound enterprises to encourage industrial growth;

To establish guidelines for programs to enhance economic opportunities and social advantages for native people and to ensure that their views are taken into account;

To examine the possible applications of development boards and corporations and to initiate effective action on such structures which may be appropriate to the Territories.

INTERDEPARTMENTAL ADVISORY COMMITTEE ON NORTHERN ROADS

Chairman: Mr. A.B. Yates,
Department of Indian Affairs
and Northern Development.

Terms of Reference

To assess and advance proposals for specific area development roads;
To be responsible for reviewing the economic assessment of each sector and assessing the relative value of all road classifications referred to in the Northern Roads Policy.

Working Group

Mackenzie Highway Committee

NORTHWEST TERRITORIES COORDINATING COMMITTEE

Chairman: Mr. S.M. Hodgson,
Commissioner of the Northwest
Territories.

Terms of Reference

To provide a forum for the exchange of information regarding on-going governmental programs in the Northwest Territories;

To provide a forum to which proposed new programs may be submitted for purposes of information and co-ordination;

To identify overlapping areas of jurisdiction and programs, and co-ordinate all government programs in order to avoid duplication of effort;

To identify and attempt to resolve areas of program conflict or incompatibility;

To identify needs which are not being met by any private or governmental agency and propose new programs and policies to meet those needs;

- To identify ineffective on-going programs and make recommendations for their improvement;
- In the event of conflicting interests which cannot be resolved by the sub-committee, the matter will be referred to the Advisory Committee on Northern Development.

Working Groups

Standing Group on Construction

Standing Group on Emergency Operations

Standing Group on Personnel Policy and Programs

Standing Committee on Resource Management

Standing Group on Transportation and Communications

FEDERAL-INTERDEPARTMENTAL CO-ORDINATING COMMITTEE — WHITEHORSE

Chairman: Mr. J. Smith,
Commissioner of the Yukon
Territory.

Terms of Reference

- This committee shall meet regularly to discuss matters of common interest, and where possible seek a common solution at that level. Each department or agency of government in the Yukon will be invited to nominate its representative. Minutes of these meetings will be prepared and distributed to these representatives in the Yukon.

- In the event of conflicting interests which cannot be resolved by the Committee, the matter will be referred to the Chairman of the ACND who will discuss it with the appropriate deputy minister in Ottawa or, if needed, refer the matter to the ACND for a recommendation.

Steering Committee

Working Groups

Sub-Committee on Communications

Staff Housing

ADVISORY COMMITTEE ON CANADIAN CONTENT IN OIL AND GAS OPERATIONS ON CANADA LANDS

Chairman: Mr. G.E. Hughes-Adams,
Department of Industry, Trade
and Commerce.

This Committee was established in March, 1974 by agreement of the Assistant Deputy

Ministers of the Department of Indian Affairs and Northern Development (Northern Affairs Program), and Energy, Mines and Resources (Energy Development).

Terms of Reference

- To advise the responsible Resource Management Agencies on the maximum practical Canadian participation in: research engineering materials equipment construction and contract services, in the development of oil and gas reserves in Canadian offshore waters.
Definite Terms of Reference have yet to be developed.

MACKENZIE DELTA DEVELOPMENT COMMITTEE

Chairman: Mr. F.J. Joyce,
Department of Indian Affairs
and Northern Development.

This Committee met for the first time on November 29, 1974.

Terms of Reference

- To evaluate the socio-economic, technical, and environmental aspects of the application for the construction of a gas gathering system in the Mackenzie Delta.

FEDERAL-TERRITORIAL REGIONAL PLANNING COMMITTEE

Co-Chairmen: Mr. A.B. Yates,
Department of Indian Affairs
and Northern Development
Mr. L. Elkin,
Government of the Northwest
Territories.

Terms of Reference

The Federal-Territorial Regional Planning Committee, established in March, 1975, is responsible for the development of regional plans relating to the socio-cultural-economic future of the Northwest Territories. Formal terms of reference are in the process of development.

AGRICULTURE CANADA (AGR)

Responsibilities

- To provide technical assistance through consultation and research to those in the North needing information on matters dealing with food production;
- To provide technical expertise on soil and vegetation surveys in the North; and
- To provide an identification and consultative service for insects, arachnids, nematodes and plants in the North.

Review of 1974-75

Northern Research Group, Beaverlodge, Alberta

Assessment for the agricultural production potential of the 2,000,000 acre Slave River Lowland area of the Northwest Territory was continued in 1974. The objectives of this project were: to establish the effect of grazing or haying on the native grassland associations; to investigate the degree and extent of nutrient deficiencies; to assess the suitability of introduced forage or cereal crops; to characterize the macroclimate of the area and the microclimate of three soil vegetation types; to investigate the place of bison and other wildlife as an alternative to agricultural production. A report is currently being prepared dealing with all but the last objective. A cooperative project has been proposed by the Canadian Wildlife Service to measure the relative potential of bison production and compare this with agricultural potential.

Climatic data recorded for the months of June, July and August was averaged for one location for seven years and for a more open area for four years. No month was without the prospects of a killing frost. There were only three years, 1968, 1970, and 1973

during July when the temperature did not go below 28 F (killing frost). In 1972, four killing frosts occurred in July. Soil temperatures at four inches reached a high of 55 F in all years except 1971 and 1974. Because of excessive flooding, 1974 registered the coolest soil temperatures even though the air temperatures remained normal.

Nitrogen was the most limiting soil nutrient. When 250 pounds per acre of N were applied to a native sedge grass stand, it increased the yield by about 2 T/A over a four year period. Brome grass and Rambler alfalfa continued to give the best yields from the seeded plots with approximately 1.5 T. of dry matter production. Crested wheatgrass, timothy, and meadow foxtail also produced well and showed good adaptation.

Further investigation was undertaken on the degree of salinity of the Grand Detour soil complex. It was estimated that about 200,000 acres exceed 4 mmhos/cm electrical conductivity in the surface eight inches. Sampling of soils and water indicated that sodium was the prevalent cation and that it was present in some soils in sufficient amount as to limit agricultural production.

As a service to the Department of Indian and Northern Affairs soil vegetation surveys were made in two areas. The Mills Lake area near Ft. Providence was investigated from July 23 - 27. This survey found a great number of constraints to encouraging agricultural production in that area. The most serious being the higher than normal water levels of the Mackenzie River, which inundated most of the hay producing lowlands. Farming and potential farm lands in the Yukon were observed from July 7 to 13, in collaboration with the Land Administration, Whitehorse. The Yukon valleys under investigation appears to meet the requirements of temperature class seven (the lowest

in a seven class system) and moisture class or D (the driest in a nine class system). There is a widespread occurrence of saline and alkaline soils throughout the southern Yukon and in many instances these areas were under application to purchase as agricultural sites. The report on this survey stressed the need for land use planning, resource evaluation and limiting allocation of resources until development of a plan for their proper utilization.

Reports on both these investigations were submitted to the Department of Indian and Northern Affairs. Since submission, a temporary suspension on the disposition of Federal Crown land for agricultural purposes in both the Northwest and Yukon Territories was announced by Northern Affairs Minister, Judd Buchanan.

Plans for 1975-76

Data from the Slave River Lowland program will be analyzed in detail, and based on this analysis, the work at Grand Detour may be terminated. If further observations are needed they will be obtained in 1975, and perhaps in 1976.

Cooperation with the governments of both the Yukon and the Northwest Territories will be maintained with respect to land use and agricultural production.

Long-term Plans

To continue to exercise the above responsibilities. No plans are presently being made to change this level of activity.

Biosystematics Research Institute, Ottawa Ontario

The Institute continued to identify aquatic insects and nematodes collected by the Freshwater Institute, Environment Canada, from the Mackenzie and Old Crow

Rivers and their tributaries. Approximately 100,000 specimens were identified.

A check list of the vascular plants of the Nahanni National Park was prepared for publication and work continued on the flora of the continental Northwest Territories. Several reports on the flora of the Mackenzie district were submitted to the CCIBP/CT Panel 10 group.

Plans for 1975-76

The Institute will continue to identify aquatic insects and nematodes collected by the Freshwater Institute. One research scientist will collect insects on Victoria Island. A manuscript on the Flora of Continental Northwest Territories will be completed.

Soil Research Institute. Ottawa

The Institute contributed technical information and expertise to northern projects. Soil and vegetation technical information was provided for a terrain survey of the Boothia Peninsula, NWT. This work was done under the Environmental-Social Program Northern Pipelines (ESP/NP) in cooperation with scientists of EMR.

At the request of IANA, soil surveyors spent a week in the Yukon evaluating areas for possible agricultural development and another week in the Mills Lake area, NWT on a similar assignment. In both cases the team included people from IANA and the Beaverlodge Research Station.

A member of the Institute has been seconded to IANA for two years beginning in October 1974 to advise on agricultural policy in the North.

Plans for 1975-76

Work will continue on the ESP/NP. The soils of Bathurst, Cornwallis and Somerset Islands will be mapped.

At the request of IANA, a soil survey emphasising agricultural capability will be made of the Liard area. The work will be funded by IANA (\$110,000) and the project will require several soil surveyors.

A northern tour is being planned for the International Society of Soil Science Congress to be held in Canada in 1978. In 1975, three scientists will travel to the Inuvik area and sample soils to be shown on the tour.

CANADIAN BROADCASTING CORPORATION (CBC)

NORTHERN SERVICE RADIO STATIONS

| | | |
|-------|----------------------|----------------|
| CFFB* | Frobisher, NWT | 1210 kHz/250W |
| CFWH | Whitehorse, YT | 570 kHz/100W |
| CHFC | Fort Churchill, Man. | 1230 kHz/250W |
| CFYK | Yellowknife, NWT | 1340 kHz/1000W |
| CHAK | Inuvik, NWT | 860 kHz/1000W |

NORTHERN SERVICE LOW-POWER REPLAY TRANSMITTER STATIONS (LPRTs)

CFWH is the program centre for the Yukon LPRT** Network

| | | |
|-----------------|--------------|----------------------------|
| Carmacks | 990 kHz/40W | |
| Mayo | 1230 kHz/40W | |
| Elsa | 560 kHz/40W | |
| Dawson City | 560 kHz/40W | |
| Clinton Creek | 990 kHz/40W | |
| Teslin | 940 kHz/40W | |
| Swift River | 970 kHz/40W | |
| Watson Lake | 990 kHz/40W | |
| Cassiar | 1340 kHz/40W | |
| Haines Junction | 860 kHz/40W | |
| Destruction Bay | 940 kHz/40W | |
| Beaver Creek | 690 kHz/40W | |
| Faro | 1230 kHz/40W | |
| Ross River | 990 kHz/40W | On-Air date: March 21, 75. |

CFYK is the program centre for the Mackenzie LPRT** Network

| | |
|-----------------|--------------|
| Hay River | 1490 kHz/40W |
| Fort Smith | 860 kHz/40W |
| Uranium City | 860 kHz/40W |
| Fort Chipewyan | 1450 kHz/40W |
| Fort Providence | 1230 kHz/40W |
| Fort Simpson | 690 kHz/40W |
| Fort Resolution | 1150 kHz/40W |
| Wrigley | 1280 kHz/40W |
| Rae/Edzo | 1200 kHz/40W |
| Pine Point | 880 kHz/40W |
| Rankin Inlet* | 1160 kHz/40W |

Inuvik is the program centre for the Delta LPRT** Network

| | |
|----------------|-------------|
| Norman Wells | 990 kHz/40W |
| Fort Good Hope | 920 kHz 40W |

NORTHERN SERVICE

Responsibilities

To provide a broadcasting service to meet the special needs of the people living in the North, native and non-native. To give them a sense of identity with the rest of Canada, and an awareness of the needs they share with Canadians living in all parts of the country, and to inform the rest of Canada about the people of the North and developments there. The Northern Service meets these responsibilities through a medium-wave and short-wave radio service, and, to an increasing extent, a television service.

Review of 1974-75

The television rebroadcasting station CHAK-TV-1 went into temporary operation at Fort McPherson, NWT in October. Quality of the transmitted signal will be greatly improved when a microwave repeater station is established at Rengleng River in the summer of 1975. This station relays the signal of CHAK-TV Inuvik, NWT. Low-power relay transmitter (LPRT) radio stations were established at Fort McPherson and Fort Franklin in the Northwest Territories, and at Ross River in the Yukon during the past year. The Fort McPherson LPRT is presently relaying CHAK but will receive a direct feed by a UHF radio and microwave link when the Rengleng River repeater is completed.

During the winter of 1973-74, the Northern Service installed and new television transmitter at Churchill, Manitoba, to improve coverage of the townsites and the Fort. The transmitter was relocated to the Telesat earth station site, the power increased, the frequency changed from channel 4 to 8, and CHFC-TV went on the air in April 1974.

Fort Franklin 1230 kHz/40W On-Air date: Feb. 15, 75
 Fort Norman 920 kHz/40W
 Fort McPherson 680 kHz/40W On-Air date: April 9, 75
 Tuktoyaktuk (600 kHz/1000W) is an affiliate.

*CBC Network connection via second audio channel of satellite ANIK.

**Unattended radio stations broadcasting from the Network.

NORTHERN SERVICE TELEVISION STATIONS FED BY SATELLITE (1974-75)

| | | | |
|----------------|-----------|--------------------------|----|
| Yellowknife | CFYK-TV | Channel | 8 |
| Whitehorse | CFWH-TV | | 6 |
| Uranium City | CBKAT | | 8 |
| Watson Lake | CBDAT | | 8 |
| Churchill | CHFC-TV | On-Air date: April 5, 74 | 8 |
| Cassiar | CBUET | | 7 |
| Pine Point | CBEBT | | 4 |
| Inuvik | CHAK-TV | | 6 |
| Dawson City | CBDDT | | 7 |
| Clinton Creek | CBDCI | | 8 |
| Keno | CBKHT | | 13 |
| Elsa | CBKHT-1 | | 9 |
| Mayo | CBKHT-2 | | 7 |
| Fort Smith | CBEAT | | 8 |
| Faro | CBDBT | | 8 |
| Rankin Inlet | CBECT | On-Air date: Oct. 24, 74 | 9 |
| Frobisher | CFFB-TV | | 8 |
| Norman Wells | CBEDT | | 9 |
| Fort Simpson | CBEGT | | 9 |
| Fort McPherson | CHAK-TV-1 | On-Air date: April 9, 75 | 13 |

Land was purchased in Yellowknife, NWT for the construction of a new studio and office plant. The building design has been completed and construction should start in June, 1975.

The sub-regional radio network called the Delta Network went into operation with CHAK Inuvik as the production centre. The network consists of the LPRT stations at Fort Good Hope, Fort Norman, Norman Wells, Fort McPherson, Fort Franklin and one affiliated station at Tuktoyaktuk.

Long-term Plans

The summer of 1975 will see the beginning of implementation of the CBC's Accelerated Coverage Plan in the Northwest Territories. The Plan will provide radio and

television network service via satellite to the following communities:

| | |
|-----------------|--------------------|
| Cape Dorset | radio & television |
| Igloolik | radio |
| Pangnirtung | radio & television |
| Baker Lake | television |
| Eskimo Point | radio & television |
| Pond Inlet | radio & television |
| Resolute | radio & television |
| Cambridge Bay | radio & television |
| Coppermine | radio & television |
| Rae/Edzo | television |
| Fort Providence | television |
| Tuktoyaktuk | television |

The above stations will be fed by a radio program satellite channel with programming being supplied from the CBC Program

Centres at Frobisher, Yellowknife, Inuvik and Montreal. The television service will be the National Network service as currently fed to the existing stations in the North, supplemented by Northern Television Service procured programming, and some NTS originated production.

Northern Television Service (NTS)

Note: National network programs appear in underlined italics. Regional and local programs appear in italics.

Upgrading of the satellite transmission facilities at the Network Control Centre in Toronto allowed for the elimination of the daily double and triple exposures of the same programs, closed circuit service feeds and program résumés on northern television. Additions to NTS staff, three new members in Ottawa and four in Toronto, have provided for more normal use of periods between programs. Daily prime-time periods on both channels B and C are now completely filled with public service announcements from territorial organizations, native groups and government departments, southern public services (such as the Red Cross) and with CBC program promotion announcements.

Program Sources

Over the past two years, the Northern Service has made use of two of the three satellite channels, which the CBC leases from Telesat Canada, to distribute its schedule of network and regional television programs to areas of the North that are not accessible by ground microwave connections.

The Northern Television Service has sometimes been able to borrow facilities to produce programs. With the assistance of the English and French television networks, it has produced a weekly 15 minute program in Inuktitut of news and information — *Targavut* produced in Montreal; three, half-hour telecasts during the last federal elections produced in Edmonton and Vancouver; two programs on the Yukon Natives' land claims; fifty, one-minute programs filmed in the North and edited in Toronto; five minutes per week of community announcements and program highlights; and six, five-minute programs per week in English, Inuktitut and Indian languages and dialects on the Mackenzie Valley Pipeline Inquiry. The latter was filmed in the Northwest Territories and flown to Vancouver and Toronto for

processing, editing and subsequent transmission to the North by satellite.

The remainder of the northern television schedule for local and regional periods consists of English and French regional exchange programs, off-air pick-ups from the English stations in the South, U.S. syndicated programs, and films from such sources as the National Film Board, the Canadian Film Institute, and three program series which resulted from NTS representation at screenings in Finland, Sweden and Germany. Programs from the French network comprise approximately five per cent of the schedule.

Development

Extensive groundwork was laid toward obtaining programs from the Alberta Native Communications Society; the Alberta Educational Communications Corporation; the Ontario Educational Communications Authority; the Department of National Health and Welfare; the Native Communications Society of the Western NWT, and the Frobisher National Film Board Super-8 Workshop.

With respect to equipment, Whitehorse acquired a sound film camera for use in producing National news items, and a silent film camera was acquired by Yellowknife for use as back-up equipment in the coverage of the Mackenzie Valley Pipeline Hearings.

NTS spent considerable time and effort with CBC Engineering Headquarters and the Toronto Region in trying to determine the acceptability of a suitable helical video tape recorder format for the playback of native-produced programs. Also, arrangements are near completion for the provision, during station break periods, of a visual weather service printed on the screen.

Assistance to Other Program Areas

In 1974, NTS contributed funds to other CBC program areas such as Regional Exchange. In addition to providing the bulk of the funds for the origination of *The National* from Yellowknife during the opening week of the Mackenzie Valley Pipeline Hearings, NTS provided general advice and guidance to national network news and program areas involved in production in the North, such as the themed-evening — *Inukshuk*. NTS also continued its work with the Native Communications Society of the Western NWT and the National Film Board Frobisher Super-8 Workshop, to develop native productions.

Radio — Local and Regional Program Highlights

CFWH Whitehorse

Yukon Eye Opener — During 1974, this morning information show was re-organized and expanded to encompass more information about Whitehorse and the surrounding communities. This new community-oriented version features national and local news, announcements of civic events and upcoming meetings, as well as popular music.

Highlights

CFWH conducted a seminar in September between all Whitehorse media representatives and RCMP members from all Yukon detachments on the theme of *Police and Media Relations*. Areas covered by the discussion were: the role and attitude of police and media in giving out information, the problems encountered by the media and police, RCMP policy for releasing information, press releases and press conferences.

Announcer/operator Kathy Rear covered for CFWH and the national network show *Our Native Land* the Yukon Indian Cultural Education Society weekend information gathering at Champagne (60 miles N.W. of Whitehorse) encompassing the Burwash, Haines Junction and Whitehorse cultural area. The purpose of the gathering was to record the history, legends, stories, songs and personal experiences from the elders of the area for use in the preparation of school text books.

Coverage of the Sourdough Rendezvous was the centre of production activities at CFWH during the week of February 24 to March 2. Announcer/operator Neil Hayes co-ordinated the coverage of this annual three-day festival from a remote broadcast unit set-up in the parlour car of a train. The train was located on an unused siding near the train station, overlooking the Yukon River where most of the events took place. The dog races, skidoo races, dog-packing contest, beauty queen contest and traditional costume fashion show were all covered in fine style.

Items of a diverse nature broadcast over CFWH in the past year included the F.H. Collins High School band concerts, the Canadian National Table Tennis Championship, of folk concert sponsored by the Yukon Arts Council, a special on a Polish mountaineering group of thirteen passing through Whitehorse to climb Mounts McKinley and Logan, and the sighting of a UFO over Lake Leberge.

Special Events Coverage

Pre-election coverage for the Yukon Territorial Election on November 18th included free-time political broadcasts and *Campaign Trail '74*. This series of twelve half-hour specials on each riding featured interviews with candidates and discussion of issues.

The CFWH news department produced two, one-hour specials entitled *The Four Year Experiment* which reviewed territorial council activities since the last election, through taped highlights from previous council meetings, and outlined the political structure in order to familiarize newcomers with the Yukon system. On election night CFWH broadcast live in a three-hour program of election coverage and interviews with successful candidates.

Frequent contributions from the Whitehorse station were made to programs for CBC syndication to: *This Country in the Morning*, *Between Ourselves*, *Weekend Sound of Sports*, *Our Native Land*, *The World at Six*, *National Radio News*, *National TV News* and Regional Radio in Edmonton, Vancouver, Yellowknife, Inuvik and on one occasion to Charlottetown, P.E.I.

The emphasis of CFWH's programming is general has shifted to a regional focus, with increased input from outlying areas through greater contact between the station and surrounding communities.

Plans for 1975-76

CFWH plans to continue its aim to bring the special interests of the outlying communities into more of the station's daily programming. Local objectives are to develop freelancers in all low-power relay transmitter locations through regular staff travel and long distance telephone calls. Many community affairs items are and will continue to be regular features in the local programming.

CFYK Yellowknife

Slavey Newsletter — This half-hour program, broadcast on the Mackenzie Network each Saturday, is prepared by Ray Sonfrère an interpreter with the territorial government. The program features Mackenzie Network News highlights and information about the up-coming issues and events in which the territorial government is involved. *The Mackenzie Valley Pipeline Preliminary Hearings* — were covered by news editors Whit Fraser and Jim Elson in English on September 11th and 12th, with Joe Tobie

ing Dogrib and Chipewyan translations
ly.
The Mackenzie Valley Pipeline Hearings
to bring the discussions on the impact of
the Mackenzie Pipeline to the people most
affected, the Northern Service provided
depth coverage of the proceedings in
various languages and dialects. A special
five-member team was formed. Facilities
were set up in a trailer next door to the
CFYK premises.

Each evening, when the Berger Hearings
in session, a special radio program con-
taining reports in the languages and dialects
of the Mackenzie and Delta networks is
broadcast. The languages and dialects being used
are Dogrib, Chipewyan, Loucheux, Hare-
skin, Slavey, Western Inuktitut and English.
The coverage team also prepares reports in
English and Eastern Inuktitut for distribu-
tion to the other parts of the North. The
hearings, which began March 3rd, 1975, are
expected to run until at least the end of
1975.

Travel Arctic Show — an information
program for tourists and visitors to the
Yellowknife area, produced by announcer/
producer George Tuccaro from June to
September. Points of interests, weather
reports, summary of forest fire conditions,
what to see and how to get there, along with
interviews with tourists, comprise the pro-
gram's format.

Highlights

CFYK broadcast in English daily coverage
of the Territorial Council Session in July
including a special half-hour daily program
in English produced by announcer/operator
Liz McGee, and special 15 minute daily
coverage in Slavey, Dogrib and Chipewyan.
On August 15th, CFYK covered the
championship of the Canadian Junior Championship
Ice Hockey Team to Yellowknife, and the
reception held in their honour at Elks Hall.
In the way of unusual interviews,
announcer/operator Marian Jackson-Wylie
talked in October with Wes Macaleer about
humorous aspects of raising chickens in
the Northwest Territories; announcer/oper-
ator Liz Hay interviewed Eunice Nayshen
about the Reindeer Drama Workshop on the
occasion of a Puppeteers Festival in
November; and Dr. Emery of the Yellow-
knife Dental Clinic was interviewed on the
Evening Show in November by Liz Hay,
about the benefits of hypnosis versus
anesthetics.

Special Events Coverage

A three-hour open line show on Alco-
holics Anonymous in August, hosted by
Whit Fraser, was very successful. Two
representatives from the national Alcoholics
Anonymous organization in Edmonton
answered questions on what is AA, how to
join, what it does, and what it can do for
you.

The CBC debating seminar held in
Yellowknife in November was a great suc-
cess. Sir John Franklyn High School in
Yellowknife came first with Inuvik's Samuel
Hearne second. Other participants in the
seminar were from St. Patrick's High School
in Yellowknife as well as from high schools
in Hay River and Fort Smith. Whit Fraser
was one of the main speakers at the debate
and delivered a speech on the topic of
provincial status for the Territories. Marian
Jackson-Wylie interviewed Massey Padgham,
considered the best all-around student in the
Territorial debates, and Jane Loftus who
won the overall debating trophy. CFYK
provided two and a half hours of municipal
election coverage on election night
December 9th. Jim Elson co-ordinated the
election coverage for Yellowknife, Hay
River, Fort Smith, Fort Simpson and Pine
Point, which included on-air profiles of
candidates and interviews with the winners
and the losers.

Plans for 1975-76

In 1975, CFYK plans to increase the
relevance and usefulness of their pro-
gramming in general, and native-language
programming in particular. Efforts will be
made to settle in with the special multi-
lingual coverage of the Mackenzie Valley
Pipeline Hearings, and as time permits, give
more study and adapt to the special needs of
the individual communities served by CFYK.

CHAK Inuvik

Special Events Coverage

Each year CHAK provides live coverage
of graduation ceremonies at the local high
schools. This allows the parents of children
from far-flung settlements, who cannot
attend the graduation, to participate in this
important event.

Aklavik Sports Day on July 2nd merited
special program coverage by CHAK. It
marked the opening of the Franche Com-
munity Centre in Aklavik, honoring the
missionary priest who was killed in a shoot-
ing incident in June. Senior announcer/oper-
ator Ken Look successfully used CBC very

high frequency (VHF) equipment to estab-
lish the program link between Aklavik and
Inuvik — an innovation that avoided the
need for conventional program circuits.

In conjunction with CFYK Yellowknife,
CHAK covered the annual Northern Games
held in July at Tuktoyaktuk. CHAK sup-
plied their own listeners, and those of other
northern stations, with one daily half-hour
program about the events including: the
"Good Woman" contest, native athletic
games, traditional dancing, handicraft and
native costume contest, tug-of-war and
canoe races. Spot items were carried on the
CBC English National Network. The esti-
mated total of participants, visitors and
tourists was close to 500.

Special Christmas and New Year's pro-
gramming featured sports and year-end
reports, choir programs and Christmas
messages in local languages.

On November 7th, the Delta Network
went into operation with Inuvik supplying
programs to Tuktoyaktuk, Norman Wells,
Fort Good Hope, Fort Franklin, Fort
Norman and Fort McPherson. This repre-
sents a substantial increase in responsibility
and work load for CHAK as the station now
provides these communities with programs
relevant to their areas and in the different
languages spoken in these communities,
(Hareskin, Loucheux, Inuktitut and
English).

Fort Good Hope (CBQE) carries a half-
hour program of news and gossip items each
week in Hareskin for the benefit of the 25 —
30 families in the bush. Good reception has
been confirmed as far away as Colville Lake,
88 miles from Fort Good Hope, as well as in
Rory Lake, Manuel Lake, Tunago Lake,
Pierot Creek and Hume River.

An important part of the local and area
news coverage provided by CHAK is *Delta*
News. Highlights from early summer pro-
grams included reports on —

- the June Arctic Women's Workshop in
Toronto. Inuit and Indian women from
all over northern Canada went there to
learn new ways of making craftwork, and
to see what people in other areas have
been doing. They were also told where
they could obtain material to make the
things they want;
- a DC-3 charter airplane which brought 27
participants from Inuvik, Paulatuk,
Aklavik and Sachs Harbour to the 250-
person settlement of Holman Island for
the Holman Island Jamboree in June. As
soon as greetings and new acquaintances
were made, preparation for the Midnight

Dance got underway at the community centre. Music was provided by a band from Inuvik featuring Louie Goose (also a CHAK announcer/operator) on vocals and guitar, Danny Holman on drums, and guest singer Corrine Stewart. The music and dancing continued into the early hours of the morning. Other activities at the Jamboree were a softball game, an evening feast and dance at the community centre and the Kingalik Duck Hunt;

- the NWT Indian Day celebration, in Fort Good Hope was held for the first time this year. The week-long gathering lasted from June 24th to July 1st. There were old-time drum dances, feasts, and many other native events;
- the Inuit Culture Festival held in June at the settlement of Arctic Red River in the Eastern Arctic. This was a week-long festival which included all kinds of native games, story-telling and other traditional activities;
- the arrival at Old Crow on June 20th of a party of 25, by chartered plane, consisting of the Yukon Indian chiefs and their assistants, and members of the Yukon Native Brotherhood, with Al Lueck, their lawyer. Their business for a period of three days was to discuss the local land claims issue in conjunction with the pipeline plans. The meetings ended with coffee and a dance on Friday night.

Plans for 1975-76

In 1975, CHAK plans to upgrade its present programming rather than introduce any radical innovations. To bring it into proportion with other native-language programming, effort will be made to increase Hareskin content particularly now that CHAK reaches more of the Hareskin-speaking residents of the lower Mackenzie communities.

CHFC Fort Churchill

Community Comment is a new feature in the 4 p.m. to 6 p.m. show, giving residents an opportunity to express their editorial viewpoints. Announcer/operator Margaret Allan started the program because there is no longer a local newspaper in Fort Churchill. Response to the program has been good.

Highlights

Announcer/operator Fonse Faour went to Resolute with the local Armed Forces

contingent to report the arctic training exercises. Although the contingent is based in Churchill, it conducts its summer training program in Resolute. CHFC provides regular coverage of military activities.

In the way of an unusual interview announcer/operator Donna Bland, with the aid of an interpreter, spoke with two visiting Russian reindeer-scientists. The scientists were in Churchill to investigate the feasibility of raising reindeer in the area.

CHFC also provides regular coverage of all types of port activities. Such activities this year included the presentation of the award for first ocean-going cargo vessel in the port to the *Unimar*; interviews with key figures involved in the raising of the ill-fated whaling ship *Ansel Gibbs* off Marble Island; coverage of a three-day visit by three navy ships to the port with a number of dignitaries aboard, including Manitoba's Lieutenant-Governor W.J. McKeag, Premier Ed Schreyer and Minister of Defense, James Richardson; and the settling of the labour dispute between longshoremen and the National Harbour Board in August.

Donna Bland reported on the weekend visit of 25 foreign ambassadors to Fort Churchill who were stopping off on their charter through the Northwest Territories. The highlight of the visit for the ambassadors was the spotting of polar bears at the garbage dump.

Special Events Coverage

CHFC was on hand in Camp Nanuk, with a borrowed public address system on top of the car, when the local Lions Club spear-headed the Dominion Day Festivities there with a public picnic. Though most of the events were cancelled because of fog and rain, CHFC provided live coverage of the picnic all afternoon.

Announcer/operator Fonse Faour and Paul Hunks put together a provincial election campaign wrap-up which was aired the night before the election and repeated on election day, at the request of callers.

On Friday, Sept. 13th, CHFC celebrated its 15th anniversary on air. The celebrations featured interviews from archival material and interviews with former A/Os (Kevin Ryan, Ken Smutylo, Peter Mansbridge, Cy Vuhrich and Wayne Collins), taped messages and greetings from former managers (Lee Major, Raoul St. Julien, Gerry Bromley, Gaston Charpentier and Paul Lanoy), and an interview with Northern Service Engineering Manager Lloyd Moore about the start of the station in 1959.

This year, for the first time, CHFC broadcast 24 hours-a-day throughout Christmas week. Christmas music was the main feature broadcast when the station would normally be off the air.

On May 1st, CHFC integrated its native-language broadcasts into its English programming. By interspersing the native-language material throughout the day, rather than saving it to be broadcast at the end of the day or the end of the week, the native listener receives more current information. This kind of presentation is also more acceptable to non-native-language-speaking listener, who no longer has to listen to a succession of native-language programs in given periods.

Manager Bruce Taylor, and announcer/operator Celina Issakiark, participated in a week-long Opportunities-for-Youth Workshop held in June in Baker Lake, NWT. The Workshop's objective was to introduce new programs for the local community radio station, and to involve more people in its operation.

At different periods during the summer, both manager Bruce Taylor and announcer/operator Ron Zegil were seconded to the Montreal Production Centre to work there while producer Les McLaughlin was in England on an Imperial Trust Bursary. Ron Zegil returned to Churchill as acting manager and Bruce Taylor went to Ottawa as acting program planning officer, (radio).

Plans for 1975-76

With the acquisition of a remote production unit, CHFC plans to extend its live coverage of special events such as the Aurora Snow Festival, Christmas Snow Festival and the Canada Day celebrations, as well as to provide live coverage of public meetings, health conferences and election forums.

CFFB Frobisher

Highlights

Announcer/operator David Forsee made film report for TV National News on the Panarctic crash at Rae Point. He also sent several items to National Radio on the capsizing of the Minna Survey ship off Resolution Island and the dumping of 150 tons of fuel oil. All attempts to fly over the wreckage for TV news film were unsuccessful.

Captain Frobisher, descendent of Sir Martin Frobisher, visited Frobisher Bay in June to unveil a plaque commemorating his ancestor's discovery.

Announcer/operators Denise Rudnicki and Rick Bray produced satire spots for *Udlik-Information Morning* which caused very strong and favourable public reaction. These satire spots dealt with community problems. For example, a young man and a girl meet and he asks her for a date. However, they discover that they can't go to the movies, they can't go bowling and they can't go swimming as the theatre, bowling alley and swimming pool all are closed indefinitely for repairs. In the end they decide the only place left to go is a bar.

Special Events Coverage

Denise Rudnicki produced for Focus North a two-part discussion on a newspaper article entitled "Are Eskimos Irresponsible?". The panel was composed of two Inuit and two non-Inuit speakers with experiences and opinions on how some help for native people is often too much help. The basis of the discussion was that government attitudes together with service programs for native people, have not affected a corresponding development in their growth of responsibility. The panel unanimously agreed to the negative.

Special news coverage was given to Dr. Rex William's announcement that the nutritional needs of the Inuit are not being met, and that National Health and Welfare is actually ignoring the problem. He recommended that government should hire hunters to provide the community with native foods. The item was reported to National Radio News and to the Inuktitut-language nationwide news reports program produced for shortwave at the Montreal Production Centre.

Prior to the July election, Northwest Territories PC candidate Bob Ward, Liberal candidate Richard Whitford and NDP candidate Wally Firth were all guests on the Morning Show. CFFB provided free-time political broadcasts and election night coverage in English and Inuktitut.

David Forsee produced *Alcohol Plebiscite*, a half-hour program which explored a variety of attitudes toward the North's drinking problem. The program reflected the prejudices and feelings which many people have about the alcohol plebiscite and informed the listener about an issue which has caused much alarm in Frobisher and elsewhere.

CFFB provided extensive coverage in July of the Cape Dorset Inuit music festival "usanginagirt" (he who listens in the company of others). Participants came from

Greenland, Arctic Quebec, Ottawa and the Central Arctic, and everyone crowded into the school gym to enjoy the rock bands, country music, all-night jam sessions and dances. The star attraction was singer Ungau Rasmus Lyberth from Greenland. The Sugluc Group and the Icebergs from Arctic Bay were among the many performers. CFFB fed programs not only to the other Northern Services stations but also to *This Country in the Summer*, and to Radio-Canada International.

CFFB aided the Eastern Arctic community of Broughton Island in setting up its independent community radio stations in September. In addition to providing technical assistance, DFFB lent Broughton Island a shortwave receiver.

CFFB sponsored the Sugluc Group's visit to Frobisher for a concert during Toonik Time in April '74. During their stay the Group was recorded by CFFB staff at Nakasuk Elementary School, 45 rpm records will be available in mid-75, at a cost of two dollars per set of two records, from the CBC northern stations and the Ottawa headquarters of the Service.

Plans for 1975-76

CFFB plans to attempt live Inuktitut-language coverage of local hockey games. Coverage will begin when there is a line installed between the arena and CFFB studios, and when a broadcast booth is built at the arena; by which time producer Jonah Kelly will have discovered how to say *puck*, *penalty*, *offside* and "*he shoots, he scores*" in Inuktitut.

MONTREAL PRODUCTION CENTRE

Highlights

Some of the guests featured on *Ishumavut* (Our Thoughts) were Charlie Watt and Mark Gordon, of the Northern Quebec Inuit Association, talking about their career training at Algonquin College in Ottawa; and Josepi Padlayat discussing the more general sharing of Christmas spirit in the North as compared to the commercialized southern celebration. Except for Wednesdays, this Inuktitut phone-in show (which is broadcast weekdays and hosted by Seemee Nookiguak with Annie Palliser) is devoted to the opinions given by Ishumavut's listeners. Wednesday's program features listeners' phone-in messages to relatives and friends. Many listeners phone in during the week to express their delight with the Inuit songs played during the program and to name their

favourite performers. Lately, a taste for Turkish music has arisen in the requests. A topic of continuing discussion has been the acceptability of the Inuktitut translation of the news, with some listeners lodging the complaint that too many English words were not translated, while other listeners felt a good job was being done. Among other topics discussed were the abuse of dogteams in some northern areas, inter-marriage, and the price of sugar.

The Montreal Production Centre broadcasts news in Cree on shortwave twice a day, and on the Quebec Community LPRT Network once a day (Mondays-Fridays). The material for the daily news broadcast is chosen for its relevance to conditions among the people of Northern Quebec, and consists of reports of interest to the Indian population drawn from native-language press and northern news bulletins.

In order to meet a growing need for information and entertainment programming, the daily Cree shortwave service will soon be expanded to a daily one-hour program in the afternoon. This program will provide an opportunity for Indian people to participate by telephone and tape recording.

Nallachine (Things to Listen to) — continuing into its fifth year, is broadcast daily Monday to Friday. Monday's program usually contains a progress report on Inuit patients who are in southern hospitals. The Tuesday and Wednesday programs have interview items on various subjects such as native organizations, council meetings, and co-ops. Thursday's program has old-time stories and legends from Eastern Arctic settlements. Fridays feature interviews, e.g. how the people used to hunt diverse animals.

Special Events Coverage

The *Northern New Year's Eve Show* was a three-hour countdown to midnight featuring Canadian personalities in the entertainment field, northern entertainers, interviews with newcomers to the North, who were spending their first New Year's Eve there, as well as with old-timers who were celebrating their fiftieth.

Producer Les McLaughlin made an hour-long documentary in March for *Between Ourselves*, about the Mackenzie Pipeline, to prepare listeners for participation in the special Mackenzie Pipeline edition of *Cross Country Check-up* which immediately followed the Northern Service documentary production. The interviews with economists, environmentalists, ecologists, sociologists

and native and non-native northerners produced an invigorating response when the pros and cons were discussed on the National Network open-line show.

An earlier special in February by Les McLaughlin about the implications of the Mackenzie Valley Pipeline was more people-oriented, focusing on how northerners would be affected personally, rather than on the broader economic, ecological and inflationary aspects.

Television

From September, *Tarqavut* (Our North) was extended to 15 minutes weekly. It is produced in Inuktitut only, and broadcast on both satellite channels B (Saturdays) and C (Sundays). The longer program succeeded two five-minute weekly shows produced in English and Inuktitut since 1973. Some features of this news and information program, co-hosted by Elijah Menarik and Seemee Nookiguak, were: a translation into Inuktitut of the Federal Government proposals to settle the Yukon Native Land claims; a description of the celebration of Easter in the North by Father Rene Belair, a former missionary in the Arctic; and an appearance by Charlie Panigoniak, with Mark Eetak, to play and sing Charlie's songs following a visit to Ireland. The program is produced for the Northern Television Service by Marie Tessier-Lavigne, a producer with CBMT, Montreal.

Plans for 1975-1976

The Montreal Production Centre plans to commence broadcasting in April a new Inuktitut-language program *Silatsiak* (Bright Sky), Monday to Friday from 8:15 to 9:00 a.m. This will be a morning wake-up program of news, weather, interviews, and feature items on matters of general interest.

A brief summary prepared, in English, French and Inuktitut, after each broadcast of *Ishumavut*, will be mailed biweekly to those who are interested. This is not an official translation but a quick note of what callers to the phone-in show talked about. The summaries will provide a better understanding of attitudes and conditions that exist in various parts of the North.

Northern Service

Three new station managers were appointed during 1974. Paul Lanoy, as Yukon Area manager stationed at Whitehorse; Pat Reilly transferred from Frobisher to Yellowknife as the Mackenzie District manager; and Aimo Nookiguak transferred from the Montreal Production Centre to Frobisher as station manager.

Nellie Cournoyea is on a year's leave from CHAK Inuvik to investigate Inuit land occupancy and land claims with Inuit Tapirisat. During her absence, the acting manager is Bob Rhodes from CBC English Network radio in Toronto.

National television's first theme-evening program *Inukshuk*, produced in cooperation with the Northern Service, was broadcast May 1st. The two-and-half-hour program on the North included films, some of which were short animations produced by Inuit in Cape Dorset.

The C.R.T.C. hearings of February 18th to 22nd, saw many interventions made by Northerners for and against CBC programs and operations in the North.

The Director of the Northern Service attended a meeting, held at Head Office in late October, between the President and other officers of CBC and the President and Directors of the Northern Quebec Inuit Association concerning "Tarqamiut" (The Northerners), a proposal stating needs and opinions about communications in Northern Quebec.

The Accelerated Coverage Plan to extend CBC television and radio service in both official languages to all communities of 500 or more throughout Canada, will extend coverage in the North. The Northern Broadcasting Plan to increase radio coverage to all communities in the North of 200 or more, and to improve the radio and television program service throughout the North, particularly for native peoples, has yet to be approved and funded by the government.

PROGRAMS MADE BY AND FOR THE NATIVE PEOPLES AND BROADCAST ON THE NORTHERN SERVICE:

SHORTWAVE SERVICE — Programs broadcast by the Montreal Production Centre.

Times Weekly

Programs

| | |
|---------|---|
| 6 hours | <i>Today Program</i> (English) Mondays through Saturdays, Part 1 at 0630 — 0700 and Part 2 at 0713 — 1740. Produced by Les McLaughlin. An English-language wake-up show of news, weather, sports and feature items from the North and from the network. |
| | <i>Nallachine</i> (Eastern Inuktitut) Mondays through Fridays 2030 — 2100 (repeated next day at 1330 — 1400) and carried live to Frobisher and Rankin Inlet via satellite. The Monday to Thursday program is produced in Montreal by Elijah Menarik and Seemee Nookiguak. Monday's program contains a progress report on Inuit patients who are in southern hospitals. The Tuesday and Wednesday programs have interview items on various subjects such as native organizations, council meetings, co-ops etc. Thursday's program has old-time stories and legends from various Eastern Arctic settlements. Friday's edition originates in Ottawa with Mary Otis, freelancer, as host. |
| 5 hours | <i>Ishumavut</i> Our Thoughts (Eastern Inuktitut) Mondays through Fridays 1230 — 1330 and carried live to Frobisher and Rankin Inlet via satellite. The program, which is produced and hosted by Seemee Nookiguak, has increased in popularity to the extent that broadcast time has been doubled since it began production last year. The phone-in facility makes the program a forum on which the Inuit can exchange ideas and express opinions on issues of importance. News, weather reports and music are also featured. |
| | |

- 1 hour 15 min. *National News* (Eastern Inuktitut)
Mondays through Fridays 1730 — 1745 (repeat at 2115 — 2130) and fed to Frobisher and Rankin Inlet at 1830 via satellite. Events across Canada and around the world are reported daily by staffers Elijah Menarik, Seemee Nookiguak and Annie Palliser.
- 1 hour 40 min. *Cree News* (Eastern Cree)
Mondays through Fridays 0740 — 0745 (repeated on Quebec community a.m. network at 0855) and 1745 — 1750 (repeated at 2110). Produced by freelancer Edna Voyageur.
- 1 hour 15 min. *Northern Messenger* (English)
Mondays through Fridays 1213 — 1330. Produced by Les McLaughlin. News and information about the North, news and feature items from northern locations and messages from southerners to friends and relatives in the North.
- 2 hours 5 min. *The Berger Inquiry* (English & Eastern Inuktitut)
Mondays through Fridays (except when Inquiry recessing) at 1103 — 1128. Whit Fraser, of CFYK produces an English-language introduction and 10 minute report on the day's proceedings, followed by Abe Ookpik's 10 minute report in Eastern Inuktitut. Produced in Yellowknife.
- 30 min. *Ikaluit Uquasi* (Eastern Inuktitut) Frobisher Calling
Mondays 2003 — 2030. Produced in Frobisher by staffer Jonah Kelly. The program serves traditional cultural interests, and features interviews about the old way of life, the history of the Inuit, and legends, stories and folk music gathered in settlements and communities throughout the Arctic.
- 30 min. *Kannatap Inuit Nunnangat* (Eastern Inuktitut) Canada North of 60°
Wednesdays, 2003 — 2030. Produced by Jonah Kelly for CFFB. A news-magazine program which provides in-depth summaries of recent happenings. The program regularly includes Co-op News, reports of settlement council sessions and newspaper editorial comments about the North.
- 30 min. *Teterkat* (Eastern Inuktitut)
Thursdays, 2003 — 2030. Produced by CFFB Frobisher. Basically a music program with reports from Baffin Island communities.
- 30 min. *Neejawtit Ikaluinee* (Eastern Inuktitut)
Fridays, 2003 — 2030. Produced at CFFB, Frobisher. A music program with a hard rock sound.
- 15 min. *Delta News* (English)
Saturdays, 0730. A report in English fed from CHAK, Inuvik as part of the Northern Morning Show. The program gives news of people, events and developments in the settlements around the Mackenzie Delta.
- 1 hour *National News Roundup* (Eastern Inuktitut)
Fridays, 2003 — 2030 (repeat Saturday at 1303 — 1330). Produced by Elijah Menarik, Seemee Nookiguak and Annie Palliser.
- 1 hour *Our Native Land* (English)
Saturdays, 1205 — 1300. The only regular National Network radio program presenting the views of Canada's native peoples, through its host, Lloyd Henderson.
- 1 hour *The Cree Speaks* (Eastern Cree)
Saturdays, 0930 — 1000 (repeat 1830 — 1900). Produced by freelancer Edna Voyageur. Program includes reports on Cree patients hospitalized in Montreal and Quebec City, music and translation of newspaper items of interest to Cree listeners.
- 10 min. *Tarquamuit* (Eastern Inuktitut)
Saturdays, 081 — 0835 (repeat at 1330 — 1350). Produced by Elijah Menarik, Seemee Nookiguak and Annie Palliser. A summary of editorial comments from northern newspapers.

Future Program Plans

- 15 min. *Silatsiak* (Inuktitut)
Mondays through Fridays -815 — 0900. A morning wake-up program of news, weather reports and music to begin April 28, 1975.

TELEVISION SERVICE — Programs produced by the Montreal Production Centre.*Tarqavut* (Inuktitut)

15 min. Saturdays, following the National News at 2300. Produced by Marie Tessier-Lavigne, with Elijah Menarik, Seemee Nookiguak and Annie Palliser as hosts. An information program produced for the Inuit of the Eastern and Western Arctic.

RADIO STATION CFFB FROBISHER, NORTHWEST TERRITORIES*Kudlik* Information Morning (Eastern Inuktitut)

25 min. Mondays through Fridays, 0600 — 0900. An English-language program of music, network news, local news, weather, sports, interviews and local feature items of interest to the Inuit community. Items from Cape Dorset and Lake Harbour are also included. Producer varies with announcer/operator on shift.

News (Eastern Inuktitut)

1 hour 15 min. Mondays through Fridays, 0600 — 0900. Three, 5-minute newscasts are given during the program KUDLIK. Producer varies.

Nallachine Things To Listen To (Eastern Inuktitut)

2 hours 30 min. Mondays through Fridays, 1330 — 1400. This program features interviews, reports on Inuit patients hospitalized in the south, and old-time stories as well as music. Produced in Montreal by Elijah Menarik, Seemee Nookiguak and Annie Palliser.

Quiruleet (Eastern Inuktitut)

5 hours Mondays through Fridays, 1603 — 1700. A music show which is divided in half to give equal time to the tastes of both country and western and rock fans. Each show is produced by an Inuit student.

National News (Eastern Inuktitut)

1 hour 15 min. Mondays through Fridays, 1830 — 1845. Produced in Montreal by Elijah Menarik, Seemee Nookiguak and Annie Palliser.

Territorial Eastern Arctic News (Eastern Inuktitut)

50 min. Mondays through Fridays, 1840 — 1850. The news is gathered from eastern Arctic settlements, from the CBC's newsroom in Yellowknife, and from news reports in Ottawa. Producer varies.

Neejawatit Ikaluine Hit Parade (Eastern Inuktitut)

30 min. Mondays, 1403 — 1430. A music program featuring the latest hits on the hard rock scene. Producer varies.

Ikaluit Uquasi Frobisher Calling (Eastern Inuktitut)

30 min. Tuesdays, 1403 — 1430. Produced by Jonah Kelly for CFFB Frobisher. The program serves traditional cultural interests, features current affairs, interviews about the old way of life, the history of the Inuit and legends, stories and folk music gathered in settlements and communities throughout the Arctic.

Kannatap Inuit Nunnangat Canada North of 60 (Eastern Inuktitut)

30 min. Wednesdays, 1403 — 1430. Produced and hosted by Jonah Kelly for CFFB Frobisher. A news-magazine program which provides in-depth summaries of recent happenings. The program regularly includes Co-op News, reports of settlement council sessions and newspaper editorial comments about the North.

Celina's Program (Keewatin Inuktitut)

30 min. Fridays, 1403 — 1430. Produced by Celina Issakiark, a freelancer from Eskimo Point, for CHFC Fort Churchill. When this program is not available, TETERKAT INOONOOT is substituted.

Teterkat Innonoot Messages (Eastern Inuktitut)

30 min. Fridays, 1403 — 1430. Producer varies. Light music of current interest and messages as and when received from Inuit patients and students "outside" to their relatives and friends in the North. Also messages between persons in isolated communities throughout the Arctic. This program is substituted for CELINA'S PROGRAM when it is not available.

Open-Line Show (Eastern Inuktitut)

1 hour Saturdays, 0905 — 1000. Producer varies.

- Our Native Land* (English)
hour Saturdays, 1210 — 1300. The only regular National Network radio program presenting the views of Canada's native peoples through its host, Lloyd Henderson.
- National News Roundup* (Eastern Inuktitut)
hour Saturdays, 1303 — 1333 AND Sundays, 1503 — 1533. Produced in Montreal by Elijah Menarik, Seemee Nookiguak and Annie Palliser and fed to CFFB via satellite.
- Tarkamuit* (Eastern Inuktitut)
0 min. Saturdays, 1330 — 1350. Produced in Montreal by Elijah Menarik, Seemee Nookiguak and Annie Palliser and fed to CFFB via satellite.
- Tusayit* The Interpreter Corps (Eastern Inuktitut)
0 min. Saturdays, 1400 — 1430. Co-hosted by John Amagoalik, Information Officer with the Government of the Northwest Territories. This program provides information to the Inuit population about the interpreter corps, their work with different organizations and their travels throughout the Northwest Territories and southern Canada. The program strives to get young Inuit interested in this type of work. Producer varies.
- Baffin Beat* (Eastern Inuktitut & English)
hours 30 min. Saturdays, 2130 — 0100. The music is directed to the Inuit with local Inuit talent participating live or pre-recorded. The show is interrupted at 2300 for 3 m0 for 3 minutes of news in English and again at 2400 for an additional 13 minutes of English news. Producer varies.
- Sunday Afternoon* (Eastern Inuktitut)
0 min. Sundays, 1833 — 1900. Music and community announcements comprise this program's format. The show is not aired every week as it is frequently pre-empted by hockey games.
- Driftn'* (Eastern Inuktitut & English)
hours Sundays, 2303 — -100. A music show interrupted by northern news in English for 13 minutes at 2400. Producer varies with announcer/operator on shift.

RADIO STATION CFYK YELLOWKNIFE, NORTHWEST TERRITORIES

- Community Announcements* (English)
hours 5 min. Mondays through Fridays, 1240 — 1255 and 1715 — 1725. Program includes community announcements of interest to the Mackenzie Network's native listeners. Producer varies with the announcer/operator on shift.
- The Berger Inquiry*
hours Mondays through Fridays (except when Inquiry recessing), 1903 — 2000. An introduction and English-language report on the day's proceedings is produced by Whit Fraser. This is followed by reports in 10 - 12 minute blocks in Chipewyan and Dogrib by Joe Tobie, in Slavey by Joachim Bonnetrouge, and in Western Inuktitut by Abe Ookpik. A similar one-hour package is sent at the same time to CHAK for airing on the Delta Network. The English introduction and report by White Fraser is identical, with reports in Western Inuktitut by Abe Ookpik, in Loucheux by Jim Stitchingly and in Hareskin and Slavey by Louie London.
- Native Voice News* (Dogrib)
hour Tuesdays through Fridays, 0737 — 0740, 0837 — 0840, 1237 — 1241 and 1725 — 1729. Three or four minute newscasts of original material geared to the Dogrib people and updated throughout the day. Produced by Celine Mackenzie.
- Our Native Land* (English)
hour Saturdays, 1310 — 1400. The only regular National Network radio program presenting the views of Canada's native people through its host, Lloyd Henderson.
- Gather Round* (English)
hours Saturdays, 1403 — 1600. A program of country and western requests received from local native people. Producer Ken Beckta, on staff.
- Square Dance Notebook* (English)
0 min. Saturdays, 1830 — 1900. A program of lively toe-tapping sounds. Host and producer Bob Fyfe, free-lancer.

- 30 min. *Alberta Native Communications Society Program* (Alberta Cree)
Saturdays, 1903 — 1930. A program with information about the natives of Alberta. Produced by Barbara Angus for the Alberta Native Communications Society.
- 1 hour *Country and Western Show* (Dogrib & English)
Saturdays, 2100 — 2200. Record show produced and hosted by Celine Mackenzie in Dogrib, with some English, featuring selections requested by the native peoples.
- 1 hour *Goin'siday* (Slavey)
Saturdays, 1630 — 1730. News and music for Slavey listeners in the Mackenzie network. Produced and hosted by Ray Sonfrère.

RADIO STATION CHFC, FORT CHURCHILL, MANITOBA

- 45 min. *Morning Show* (Keewatin Inuktitut)
Mondays through Fridays, 800 — 0900. Three, three-minute Inuktitut inserts by Lavinia Ford (freelancer) during the morning show.
- 50 min. *Chipewyan Program* (Chipewyan)
Mondays through Fridays, 1330 — 1340 (occasionally repeated at 1530 — 1540). This program includes messages to residents of Tadoule Lake 140 miles west of Churchill, stories, legends, local news and music. Produced by a casual staffer at CHFC.
- 1 hour 40 min. *Celina's Program* (Keewatin Inuktitut)
Mondays through Fridays, 1638 — 1648 and 1735 — 1745. The program includes messages, local news, public affairs, stories and music. Produced by Celina Issakiark, a freelancer from Eskimo Point.
- 2 hours 30 min. *The Cree Program* (Manitoba Cree)
Mondays and Fridays, 1608 — 1638. The program contains local news and announcements, some interviews, stories and music. In the Summer of 1975, this program will be increased in length to one hour daily and aired from 1503 — 1600. Produced by a casual staffer at CHFC.
- 1 hour *Nallachine* (Eastern Inuktitut) Things To Listen To
Mondays at 2030 — 2100 and Sundays at 1430 — 1500. The contents of this program are both informational and musical. Produced in Montreal by Elijah Menarik, Seemee Nookiguak and Annie Palliser.
- 20 min. *Tarquamuit* (Eastern Inuktitut)
Saturdays, 1810 — 1830. A summary of editorial comments from northern newspapers. Produced by Elijah Menarik, Seemee Nookiguak and Annie Palliser in Montreal.
- 30 min. *Eskimo Point Program* (Keewatin Inuktitut)
Saturdays 930 — 1000. This program is aimed at the residents of Eskimo Point with items of interest and local music gathered in Eskimo Point. Produced by Celina Issakiark, a freelancer from Eskimo Point.
- 1 hour *Our Native Land*
Saturdays, 1305 — 1400. The only regular National Network radio program presenting the views of Canada's native peoples through its host Lloyd Henderson.
- 30 min. *Native Communications Show* (Manitoba Cree & English)
Saturdays, 1400 — 1430. This program contains anything affecting native and Métis peoples in Northern Manitoba. Produced by the Native Communications Inc. of Thompson, Manitoba.

Future Program Plans

- 30 min. *Rankin Inlet Program* (Keewatin Inuktitut)
Saturdays, time to be announced. The program will contain interviews and topics of interest from Rankin Inlet. To be produced by the staff of the Rankin Inlet community radio station.

RADIO STATION CHAK, INUVIK, NORTHWEST TERRITORIES

- 7 hours *Community Announcements* (English)
Mondays through Sundays, 1203 — 1300, 1845 — 1900, 2303 — 2315. Interspersed throughout the daily programming are these public service announcements and emergency messages to people out in

the bush. Many people are reliant upon these announcements as their only source of vital, often life and death, information. Public health messages, hospital reports on patients released and medical evacuations, and information from game management organizations as to the moving of herds and the picking up of slaughtered animals are all features of this important broadcast service.

Morning Show (Inuktitut, Loucheux & Hareskin)

30 min. Mondays through Fridays, 600 — 0900 (repeat 2300 — 0100). This English-language program contains three, native-language drop-ins of 2 — 3 minutes each.

Country and Western (English)

3 hours Mondays through Thursdays, 1300 — 1400, 2403 — 0100. Country and Western music programs have been instituted because of the very keen interest and enjoyment the people of this region receive from them. Producer varies with announcer/operator on shift.

Public Affairs Program (English, Inuktitut, Loucheux & Hareskin)

hour Mondays, Wednesdays and Fridays, 1903 — 1920, 1920 — 1940, 1940 — 2000. Occasional coverage is needed for events such as the Northwest Territories Council sessions. Translated and produced by Rosie Albert, Jim Koe and Pauline Mazazumi, freelancers.

YEA — ANOW — DI A Long Time Ago (Inuktitut & Loucheux)

hour Tuesdays, 2230 — 2300, Thursdays 2230 — 2300. Legends and stories told in Inuktitut and Loucheux with an English translation. Produced by Louie Goose, on staff at CHAK.

Inuit Nipaitt A Native Voice (Inuktitut, Loucheux & Hareskin)

hour Wednesdays, 2230 — 2300, Fridays, 2230 — 2300. A program featuring news, public affairs and information. Inuktitut produced by Rosie Albert, Loucheux by Jim Koe and Hareskin by Pauline Mazazumi, freelancers.

News and Public Affairs (Hareskin)

30 min. Mondays, 2230 — 2300. Produced by Mary Wilson, a freelancer from Fort Good Hope.

Our Native Land (English)

hour Saturdays, 1210 — 1300. The only regular National Network radio program presenting the views of Canada's native peoples through its host, Lloyd Henderson.

Nughwha Kutchin Guhnduk The People Speak (Loucheux, Inuktitut & Hareskin)

hour 30 min. Saturdays, 1400 — 1530. The program contains interviews and discussions of current affairs. Produced by CHAK staffers with freelance hostess Mary Teddie and contributions from various freelancers. Program made in cooperation with the Committee of Original People's Entitlement.

Tukudk Kindjik Loucheux Request Show

hour 30 min. Saturdays, 1530 — 1700. A program containing light music requests, messages and announcements. Produced by CHAK staffers with freelance producer Jim Koe, hostess Lucy Moore and contributions from Susie Husky.

From the Trapline (English)

30 min. Sundays, 1230 — 1300. The program supplies information directly related to trapping such as new methods and equipment, fur auctions, and interviews with fur buyers and Delta District trappers. Produced by Ken Look and Louie Goose, on staff, CHAK.

RADIO STATION CFWH, WHITEHORSE, YUKON TERRITORY

Yukon Native Voice (English)

hour Saturdays, 1630 — 1700. This program includes news and music with some native-language items where possible, (Tlingit and Tutchone). Produced by Kathy Rear, on staff, at CFWH.

Our Native Land (English)

hour Saturdays, 1300 — 1400. The only National Network radio program presenting the views of Canada's native peoples through its host, Lloyd Henderson.

Future Program Plans

Klahowya (English)

2 hours

Saturdays, 1400 — 1600. A request show aimed at native youths. It is planned to encourage contributions from freelance community correspondents which will be an important facet of this information and music program. To be produced by Kathy Rear, on staff at CFWH.

NOTE: The shortwave service and northern program centres all broadcast a weekly total of approximately 133 hours of radio programs.

CBC NORTHERN SHORTWAVE SERVICE / SERVICE ONDES COURTES DU NORD DE RADIO-CANADA

| EST / HNE ΔΔΔΔΔ ΔΔΔΔΔ ΔΔΔΔΔ | MONDAY THROUGH FRIDAY LUNDI À VENDREDI ΔΔΔΔΔ ΔΔΔ ΔΔΔΔΔ ΔΔΔΔΔ ΔΔΔΔΔ ΔΔΔ ΔΔΔΔΔ ΔΔΔΔΔ | SATURDAY / SAMEDI ΔΔΔΔΔ ΔΔΔ ΔΔΔΔΔ | SUNDAY / DIMANCHE ΔΔΔ ΔΔΔΔΔ ΔΔΔΔΔ | EST / HNE ΔΔΔΔΔ ΔΔΔΔΔ ΔΔΔΔΔ | KH7 ΔΔΔΔΔ ΔΔΔΔΔ ΔΔΔΔΔ |
|--------------------------------------|--|---|---|--------------------------------------|--------------------------------|
| 0628 | SIGN-ON | SIGN-ON | SIGN-ON | 0628 | 9625 5960 |
| 0630 | CBC NEWS & SPORTS | CBC NEWS & SPORTS | SPORTS ECHO | 0630 | |
| 0640 | RADIO JOURNAL & CHRONIQUE SPORTIVE | RADIO JOURNAL & CHRONIQUE SPORTIVE | | 0640 | |
| 0655 | MUSIC INTERLUDE | MUSIC INTERLUDE | | 0655 | |
| 0700 | THE WORLD AT SEVEN & SPORTS HEADLINES | CBC NEWS & SPORTS | CBC NEWS & SPORTS | 0655 | |
| 0710 | | | RADIO JOURNAL | 0710 | |
| 0715 | CREE NEWS ΔΔΔ ΔΔΔΔΔ | FRESH AIR (Northern news stories, weather reports and sports, music and commentaries; and at approx. 07:30 — The Delta News). | MUSIC FROM OTHER CONTINENTS | 0715 | |
| 0720 | FRESH AIR (Northern news stories, weather reports and sports, music and commentaries) | | | 0720 | |
| 0800 | THE WORLD AT EIGHT | CBC NEWS | CBC NEWS | 0800 | |
| 0805 | | | SPORTS & WEATHER | 0805 | |
| 0810 | | TALKING SPORTS | FRESH AIR (Northern news stories, weather reports and sports, music and commentaries) | 0810 | 11720 9625 |
| 0813 | THIS COUNTRY IN THE MORNING (Host Michael Enright talks with the famous and infamous about their careers, hobbies and opinions, and plays the best in Canadian music.) | CBC NEWS | CBC NEWS | 0813 | |
| 0900 | | | SUNDAY MAGAZINE (A comprehensive and detailed look at the major news stories of the week) | 0900 | |
| 0905 | CBC News at 0900 and 1000. | THE QUIET CORNER | | 0905 | |
| 0910 | | FAMILY FAVOURITES | | 0910 | |
| 0930 | | CBC NEWS | CBC NEWS | 0930 | |
| 1000 | | DANNY FINKLEMAN SATURDAY SHOW (Program of interviews, showbusiness items, comedy and Canadian music.) CBC News at 1100. | SUNDAY SUPPLEMENT | 1000 | |
| 1003 | | | | 1003 | |
| 1055 | TERRITORIAL AFFAIRS or THE NATION'S BUSINESS (Wednesdays only) | | | 1055 | |
| 1100 | CBC NEWS | | CBC NEWS | 1100 | 9625 5960 |
| 1103 | MUSIC & VARIETY | | ROUND THE HORNE | 1103 | |
| 1130 | CBC NEWS, WEATHER & SPORTS | CBC NEWS, WEATHER & SPORTS | CBC NEWS, WEATHER & SPORTS | 1130 | |
| 1145 | LE MONDE CE MATIN & NOUVELLES DU SPORT | RADIO JOURNAL & NOUVELLES DU SPORT | RADIO JOURNAL & NOUVELLES DU SPORT | 1145 | |
| 1200 | THE WORLD AT NOON | CBC NEWS | CBC NEWS | 1200 | |
| 1205 | | | CAPITAL REPORT (Analytical reports from across Canada and the world) | 1205 | |
| 1210 | | OUR NATIVE LAND (Events, interviews, opinion and music of native people, with host Lloyd Henderson) | | 1210 | |
| 1212 | NORTHERN MESSENGER (Reports from northern locations on news events happening in the area and messages to listeners) | | | 1212 | |
| 1230 | ISHUMAYUT ΔΔΔΔΔ 514 / 285-3479 (Phone-in program for Eskimo listeners) | NRC OFFICIAL TIME SIGNAL & CBC NEWS | NRC OFFICIAL TIME SIGNAL & CBC NEWS | 1230 | |
| 1300 | | ESKIMO NEWS ROUNDUP ΔΔΔΔΔ ΔΔΔΔΔ | THE ENTERTAINERS | 1300 | |
| 1303 | | TARQAMIUT ΔΔΔΔΔ | | 1303 | 9625 5960 |
| 1330 | NALLACHINE ΔΔΔΔΔ | REGIONAL EXCHANGE | | 1330 | |
| 1350 | | CBC NEWS | | 1350 | |
| 1400 | CBC NEWS | BETWEEN OURSELVES | | 1400 | |
| 1403 | SCHOOL BROADCASTS | | | 1403 | |
| 1430 | THE BOB KERR SHOW (Mon. to Thurs.) | | | 1430 | |
| 1430 | CANADIAN CONCERT HALL (Friday) | | | 1430 | |
| 1500 | | CBC NEWS | CBC NEWS | 1500 | |
| 1503 | | FOLK CIRCLE | THE BUSH AND THE SALON | 1503 | |
| 1530 | THE MAX FERGUSON SHOW | | | 1530 | 9625 5960 |
| 1600 | AU MAX DU JOUR | RADIO JOURNAL | RADIO JOURNAL | 1600 | |
| 1603 | | TOUR DE CHANT | MUSIQUE DES NATIONS | 1603 | |
| 1700 | THE WORLD AT FIVE | CBC NEWS & SPORTS | CBC NEWS & SPORTS | 1700 | |
| 1710 | | NORTHERN MESSENGER REVIEW | EXCHANGE | 1710 | |
| 1730 | PERSPECTIVES | THE CREE SPEAKS ΔΔΔ ΔΔΔ Δ | ESKIMO NEWS ROUNDUP ΔΔΔΔΔ ΔΔΔΔΔ | 1730 | |
| 1740 | ESKIMO NEWS ΔΔΔΔΔ | | | 1740 | |
| 1755 | CREE NEWS ΔΔΔ ΔΔΔΔΔ | | | 1755 | |
| 1800 | DE TOUS LES POINTS DU MONDE | DE TOUS LES POINTS DU MONDE | DE TOUS LES POINTS DU MONDE | 1800 | |
| 1815 | | NOUVELLES DU SPORT | NOUVELLES DU SPORT | 1815 | 9625 5960 |
| 1820 | COMMENTAIRE | REGIONAL EXCHANGE | SOURIRE EN MUSIQUE | 1820 | |
| 1830 | AS IT HAPPENS (A live, phone-out show probing behind the headlines of the day, with Barbara Frum and Alan Matlind.) CBC News at 1900. | INSIDE FROM THE OUTSIDE (Canadian comedy satire show) | MUSIC OF OUR PEOPLE | 1830 | |
| 1900 | | CBC NEWS | CBC NEWS | 1900 | |
| 1903 | | GILMOUR'S ALBUMS | N.H.L. HOCKEY BROADCASTS (Starting time varies) | 1903 | |
| 2000 | CBC NEWS | CBC NEWS | | 2003 | |
| 2003 | ESKIMO PROGRAMS ΔΔΔΔΔ ΔΔΔΔΔ ΔΔΔΔΔ | CONCERN | | 2030 | |
| 2030 | NALLACHINE ΔΔΔΔΔ | | | 2100 | |
| 2100 | DE TOUS LES POINTS DU MONDE | | | 2100 | |
| 2110 | CREE NEWS ΔΔΔ ΔΔΔΔΔ | | | 2110 | |
| 2115 | ESKIMO NEWS ΔΔΔΔΔ | | | 2115 | |
| 2130 | TERRITORIAL NEWS ROUNDUP (Mon. only) | | CBC NEWS | 2130 | 9625 5960 |
| 2133 | COMEDY & VARIETY SHOW (Tues. to Fri.) | | | 2133 | |
| 2200 | CBC NATIONAL NEWS & FROM THE CAPITALS | LE MONDE CE SOIR | SPINOFF | 2200 | |
| 2210 | | TARQAMIUT ΔΔΔΔΔ | CBC NATIONAL NEWS | 2210 | |
| 2215 | FIVE NIGHTS A WEEK AT THIS TIME | | WEEKEND SOUND OF SPORTS | 2215 | |
| 2230 | THE GREAT CANADIAN GOLD RUSH (Monday) | THE CREE SPEAKS ΔΔΔ ΔΔΔ Δ | CBC PLAYHOUSE | 2230 | |
| | TOUCH THE EARTH (Tuesday) | | | | |
| | COUNTRY ROAD (Wednesday) | | | | |
| | JAZZ RADIO-CANADA (Thursday) | | | | |
| | MAJOR PROGRESSION (Friday) | | | | |
| 2300 | | CBC NEWS | CBC NEWS | 2300 | 9625 5960 |
| 2303 | | CBC STAGE | QUEBEC NOW | 2303 | |
| 2400 | CBC NEWS, NORTHERN WEATHER & SPORTS | CBC NEWS, NORTHERN WEATHER & SPORTS | CBC NEWS, NORTHERN WEATHER & SPORTS | 2400 | |
| 0010 | THE ECLECTIC CIRCUS (Mon. to Thurs.) | THE MIDNIGHT HOUR | ECHOES OF AN ERA | 0010 | |
| | LONG AGO YESTERDAY (Friday) | | | | |
| 0100 | CBC NEWS | CBC NEWS | CBC NEWS | 0100 | |
| 0105 | END OF BROADCAST DAY | END OF BROADCAST DAY | END OF BROADCAST DAY | 0105 | |

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Send all comments, enquiries and reception reports to the CBC Northern Service,
P.O. Box 6000, Montreal, Quebec, Canada.

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Adresser toute correspondance ou demande de renseignements à Radio-Canada, Service du Nord,
C.P. 6000, Montréal, Québec, Canada.

CANADIAN NATIONAL RAILWAYS (CNR)

Responsibilities

The development of the North's mineral, petroleum, and water resources constitutes a complex set of projects strategic to the welfare of present and future generations of Canadians. Recognizing this commercial potential and social responsibility, CN continues to be active in providing efficient and comprehensive transportation and telecommunication facilities for business and community interests in these regions.

Co-ordination of CN's involvement in northern development rests with Canalog Logistics Ltd., a subsidiary formed in 1973. CN's activities in the Canadian North concern bulk transport of mine and forest products (and potentially, of liquid fuels) to southern markets, transport in logistics support of exploration and construction projects, and re-supply of communities, telecommunications (telephone and microwave) for residential and commercial uses, and consulting on a contract or cooperative basis for pipeline, rail, and other studies within and outside CN.

Review of 1974-1975

In October 1974, Canalog Logistics Ltd., in conjunction with Canadian Pacific Consulting Services Ltd., completed the "Arctic Oil and Gas By Rail" study for the T.D.A. The study concluded that an Arctic railway operation is technically feasible, and preliminary cost and timing estimates were provided for 28 combinations of origin, traffic volume, and traffic mix. It has been developed in sufficient detail, within its terms of reference, so that it can serve as a point of departure for more detailed analysis of rail system components, for comparative studies with pipeline and intermodal operations, and for optimization of the total

transportation scheme, including the potential of a resource-carrying railway in the western Arctic.

In other consulting work, Canalog has continued to provide expertise in pipeline logistics planning for the "Canadian Arctic Gas Study Ltd." consortium on a contract basis. CN withdrew from membership in May 1974, having fulfilled its objective of updating its research material.

Another Canalog study, undertaken jointly with CP on behalf of the Ministry of Transport and the Department of Indian and Northern Affairs, is currently reviewing Yukon Rail Development by considering extension of the White Pass and Yukon Railway north to Carmacks, primarily to serve mining activity in the region.

Environmental problems in the North have received attention in the course of two recent developments within the CN system. A "System Housing Committee", appointed during the summer of 1974, is investigating the need for, problems in, and provision of company-sponsored housing for employees in remote or otherwise isolated locations, such as northern branch lines and telecommunication stations. On another front, protection of the sensitive arctic environment from human intervention should be enhanced through CN's participation, since September 1974, in "N.E.E.L.S.", the National Emergency Equipment Locator System. This is a new comprehensive on-line computer system, sponsored by Environment Canada in close cooperation with the Ministry of Transport and other agencies, which provides vital information on the nearest suitable equipment and materials for combating spills of oil or hazardous material at any location in Canada.

In the Eastern Arctic, CN continues to supply the James Bay Energy Corporation

Project with building materials, machinery, petroleum products, and other essentials for the LG2 site, through the railhead at Matagami. Despite disruptions in the work schedule, record volumes were moved in 1974.

In the central Arctic, CN cooperates with marine shippers to re-supply the Keewatin District by bringing materials to Churchill for furtherance to scattered points in this area.

In the Western Arctic, CN continues operation of the Alberta Resources Railway (under lease agreement with the Provincial Government) to Grande Prairie and Dawson Creek, and the Great Slave Lake Railway to Hay River and Pine Point. Uncertainty in the timing of development of the Athabasca oil sands and the Mackenzie Delta oil and gas fields has made definitive plans in these areas heavily contingent on government policy decisions, for producers and transporters alike.

Under a July 1973 "agreement in principle", the governments of B.C. and Canada initiated a rail development, a port development, and the related infrastructure programs for northwest B.C. The governments are negotiating details as portions of the programs develop. In accordance with the "agreement in principle", CN is conducting mapping and environmental studies for the proposed Meziadin branch commencing at Terrace and extending 262 miles northerly to a connection with B.C. Railway Dease Lake Line from Fort St. James to Dease Lake.

As the North continues to develop, Canadian National Telecommunications undertakes to meet the needs of business and industry through expansion of its telecommunication facilities and services. The importance of telecommunication facilities

services. The importance of telecommunication services in the social life of northern residents is recognized, and CNT will endeavour to keep pace with the demands imposed by expanding communities. Although public telephone service is the major portion of CNT's operations in the North, other types of public and private telecommunication services, such as Public Message, Telex, and data communications are also provided.

Despite a generally hesitant economy within Canada during 1974, the demand for telecommunications services in the North continued at an increased rate. At the end of 1974, 25,523 telephones, including 16,507 main stations, were served from a total of 58 telephone exchanges. This represents a 12.5 per cent increase in main stations over the previous year. The number of completed long-distance calls also increased significantly, and was 24.8 per cent over last year.

Telephone exchange expansion or replacement projects were undertaken at: Assiari, Cambridge Bay, Faro, Fort Providence, Fort Smith, Haines Junction, Mayo, Mucho Lake, and Watson Lake. In addition, one of the latest types of electronic stored-program control telephone exchange was put into service at Hay River and also at Inuvik; new buildings were constructed to house these exchanges.

Expansion of the Direct Distance Dialing service in the North was mainly confined to the Great Slave Lake area as a result of equipment being installed at Hay River. The subscribers in the communities of Yellowknife, Hay River, Fort Smith, Fort Simpson, and Pine Point can now originate D.D.D. calls. In the Yukon Territory, this service was expanded to include the community of Mayo. Through these additions, the proportion of subscribers in the North now having access to the D.D.D. service has increased to 100 per cent.

Additional telephone and data communication facilities were provided to oil companies engaged in gas and oil exploration activities within the Mackenzie Delta.

Telephone and Telex services were extended to the second Northern Canada Power Commission's hydro-electric project on Snare River, 80 miles north of Yellowknife.

Expansion of the public mobile telephone service occurred through the provision of additional base station facilities at Arctic Red River, Rat Pass, Ebbutt, Gley, Saline River, Fort Norman, Fort Good Hope, and Minto. Reliability was

improved at other existing base stations through the replacement of tube-type equipment with solid-state equipment.

Plans for 1975-76

Under the Port Development program instituted by an "agreement in principle" in July 1973, the Federal Government has completed grading of a 40-acre deep-sea general cargo terminal at Prince Rupert. The terminal site is to be served by CN. Two berths are scheduled for completion early in 1976.

As for CNT, instalment of local and long-distance facilities will continue. Thus, the remote communities of Snowdrift, Holman, and Sach's Harbour will have local dial service with long-distance service provided via the ANIK I satellite. Paulatuk will also have both services. Party-line service is scheduled for Indian communities in the Hay River and Yellowknife exchange areas. D.D.D. service will be introduced in the Fort Nelson area, thus increasing the proportion of subscribers in the North having access to this service to 90 per cent. A public mobile base station will be installed at Dawson.

Long-term Plans

CN will continue its active contribution toward an orderly development of the North.

Under the Yukon Rail Development program, Canalog Ltd. is committed to long-term research for a total transportation network connecting continental rail, highway, and coastal barge operations, in order to achieve optimum incidence of benefits from anticipated natural resource development. In the eastern Arctic, CN expects to continue servicing the James Bay energy project until its completion in 1984. Further development of water and mineral resources in the Ungava Bay, James Bay, and Labrador Trough areas will provide a broader base for extending transportation and communication facilities in northern Quebec.

CNT will secure expansion of all telecommunication services to keep pace with service demands. It is planned to expand the local dial service at Whitehorse with an electronic stored-program control telephone exchange. The last link of the Hay River-Inuvik microwave system will be completed. In turn, this Mackenzie Valley system will be connected to the Grande Prairie-Alaska microwave system through the construction of the link between Fort Simpson and Fort Nelson. Plans are being made to provide

telecommunication services for the construction and operation phases of the proposed gas pipeline when this project is finally approved.

CANADIAN TRANSPORT COMMISSION (CTC)

AIR TRANSPORT COMMITTEE

Responsibilities

The licensing of air carriers to operate commercial air services; the economic regulation of air carriers; investigations and surveys relating to the operation and development of commercial air services in Canada and advising the Minister of Transport on matters relating to civil aviation.

Review of 1974-75

GAP Pine:

Extended FY 1974 contract of *Labrador Airways Limited* from June 30th to July 31st, 1974 for Goose Bay-Hopedale Service;

Extended FY 1974 contract of *Nordair Limited* from June 30th to July 31st, 1974 for Frobisher Bay-Resolution Island-Saglek-Goose Bay service;

Awarded new contract to *Labrador Airways Limited* from August 1, 1974 to June 30, 1975 for Goose Bay-Saglek-Resolution Island services;

Awarded new contract to *Labrador Airways Limited* from September 1, 1974 to June 30, 1975 for Goose Bay-Saglek-Resolution Island services;

Amended contract of *Labrador Airways Limited* for Goose Bay-Saglek-Resolution Island services for additional aircraft from November 6, 1974 through December 5, 1975.

DEW Line:

Awarded contract to *Transair Limited* for the vertical airlift for the period of July 1, 1974 through June 30, 1975;

Awarded contract to *Nordair Limited* for the lateral airlift for the period July 1, 1974 through June 30, 1975;

Supervision and co-ordination of these contractual arrangements continue.

Authorities granted

To serve additional point Wringley, NWT.

Change of base from Fort Simpson, NWT. to Fort Nelson, B.C.

To operate Group D (DC-3) aircraft at Fort Smith, NWT.

Class 4 Group A Charter from a base at Henik Lake, NWT.

To operate Group E aircraft (restricted to one Grumman Gulfstream G1) at Yellowknife, NWT.

Class 4 Group A Charter from a base at Pine Point, NWT.

Class 7 Specialty — Flying Training — from a base at Yellowknife, NWT., using Group A aircraft.

Class 2 Regular Specific Point serving the points Churchill, Manitoba and Resolute, Northwest Territories using Groups E and F aircraft.

Class 7 Specialty — Flying Training — from a base at Whitehorse, YT using Group A aircraft.

To serve the additional point Igloodik, NWT.

To operate DC-3 aircraft from Resolute NWT.

Class 9-4 International Charter, using Groups A B C from a base at Fort Simpson, NWT.

Participation in studies on northern air transport

Air Transport Committee staff participated in the working group convened by the Arctic Transportation Agency to consider development of a Northern Air Policy. The objective of the study was to inventory the unit toll air services for both passengers and cargo available to northern communities and obtain the view of producers and users alike. This is a follow-up to the study initiated by MOT (in which CTC staff participated) which concerned the facilities available in the North to support air services. A considerable number of man hours were dedicated to the preparation and analysis of relevant financial traffic statistics. Field visits were made to 14 communities in the NWT and Yukon to discuss the commercial air service with the residents. Further field visits were made to carriers operating in the North to gain their views. The working group has maintained a regular succession of meetings to correlate members' assigned activities with the view to producing a report in 1975.

Upon completion and delivery of the report this working group intends to disband unless further commissioned.

Long-term Plans

Normal planning to meet responsibilities

CENTRAL MORTGAGE AND HOUSING CORPORATION (CMHC)

Responsibilities

Design of housing, preparation of town development plans, and drafting of planning legislation as requested from time to time by the Department of Indian Affairs and Northern Development.
Financing of housing under the terms of the National Housing Act.

Review of 1974-75

Lending Activities

Yukon

In 1974, 83 new housing units were financed under the National Housing Act, less than 50 per cent of the number financed in 1973. Of these, 66 were under the insured lending provisions by approved lenders and 17 by CMHC. All of the units approved by CMHC were made under the Assisted Home Ownership Program, arising from the amendment to the NHA made in 1973.

Loans for 43 existing housing units were made in 1974, 41 of which were financed by approved lenders and two by CMHC.

While there was no new activity under the Public Housing Sections of the NHA in 1974, three projects are under consideration, and it is expected that commitments for 30 units in a total amount of \$1.2 million will be made for 1975. It is possible that an application for an additional 32 units, for \$1 million will be received before the end of this year. Construction will be completed in 1975 on five projects for 62 units approved in previous years.

Northwest Territory

Loans for 216 new housing units were approved in 1974, about 40 per cent of the peak reached in 1973. Of these, 54 units were financed by the approved lenders and

162 units by CMHC. More than half the CMHC activity arose from one non-profit project which, in addition to 116 units, included 120 hostel beds.

Nineteen existing housing units were financed in the past year, three by approved lenders and 16 by CMHC.

During the first month of 1975, 15 Public Housing Units have been approved for a total of \$5.1 million. A further application for an additional 57 units at an estimated cost of \$2.5 million is being reviewed. Application for 50 units at an estimated cost of \$2.2 million is anticipated before the end of the year.

Territorial Second Mortgages

CMHC has continued to administer the second mortgages provided by the Governments of the Yukon and the Northwest Territories. In 1974, 10 loans were approved for the Yukon and six for the Northwest

Territories, bringing the total of such loans to 185 since the inception of the program in 1962.

Partnership Activities

There was no further activity under the partnership provisions of Section 40 of the National Housing Act, for either the Yukon or the Northwest Territories. It is anticipated that any Public Housing in the future will be financed under the lending provisions of Section 43.

Emergency Repairs — Part V NHA

In 1974, the following Part V grants were approved for emergency repairs in the Territories:

| | |
|---|-----|
| Métis & Non-Status Native Association of Northwest Territories: | 200 |
| Yukon Association of Non-Status Indians: | 153 |

Total Activity Approved, 1974

| | No. of Loans | No. of Units | Hostel Beds | Amount \$000 |
|-----------------------|-----------------|-----------------|----------------|-----------------|
| Yukon | 96 | 126 | — | 4,396 |
| Northwest Territories | 42 | 235 | 120 | 8,705 |

Long-Term Plans

The facilities provided under the National Housing Act and the services of Central Mortgage and Housing Corporation will be made available when and where necessary.

CROWN ASSETS DISPOSAL CORPORATION (CADC)

Responsibilities

Crown Assets Disposal Corporation is responsible for the sale of surplus assets reported by Federal Government departments and agencies operating in northern Canada. Under a long-standing agreement CADC also conducts the sale of United States Government surplus property located at DEW Line sites and other northern establishments. In addition the Corporation has an agreement to act as agent of the Government of the Northwest Territories in the sale of their surplus assets.

Review of 1974-75

Normal sales were conducted during the summer and autumn at locations in the Yukon and Northwest Territories. Incidental items of U.S. surplus property located at DEW Line Stations were sold to individuals or organizations operating in the area.

Plans for 1975-76

The Corporation will conduct normal sales operations and be ready to assist in any special disposal problems that may arise at Canadian or U.S. establishments.

Long-term Plans

The Corporation will continue to provide a service to Federal Government Departments and to United States Government Agencies, with respect to the sale of their surplus assets located in the North.

DEPARTMENT OF COMMUNICATIONS (DOC)

Responsibilities

The Department of Communications was established in 1969 to foster the orderly development and operation of telecommunications for Canada in the domestic and international spheres. This includes: recommending national policies and programs with respect to communications services for Canada; promoting the development and efficiency of Canadian communications facilities; assisting Canadian communications systems to adjust to changing conditions; allocating radio frequencies to permit the orderly use of radio communications; protecting Canadian interests in international telecommunications matters; and co-ordinating telecommunications services for departments and agencies of the Government of Canada.

Review of 1974-75

Northern Co-ordination

The Department continued to play an active role in the various committees of the Advisory Committee on Northern Development (see the ACND section of this report for elaboration on its structure).

A Working Group chaired by the Department studied Government VHF Communications Requirements in the Mackenzie Valley and submitted its recommendations to the interested committees of the ACND. The report stressed the need to improve the planning and co-ordination of government communications in this area. DOC is now preparing to implement the recommendations of the report.

In cooperation with the Yukon Territorial Government and other agencies, the Department took part in a joint study of Government mobile radio telephone needs in the Yukon. This study, known as the Yukon

Territorial Communications Project and co-ordinated by DOC, was set up to develop an integrated VHF network providing both mobile coverage and trunking to serve several federal and territorial government departments operating in the Yukon. The objectives were to minimize total costs and to utilize common carrier facilities (as opposed to new private systems) to the maximum extent possible. In August 1974, the Project Team submitted plans for construction of the integrated system during the 1975-76 fiscal year at substantially less than the estimated cost of individual private systems. The recommendations were accepted by the departments concerned and also by the ACND.

Management of the Radio Frequency Spectrum

The DOC operates three district offices in the North at Yellowknife, Whitehorse and Fort Smith. The DOC district offices are responsible for assigning radio frequencies and issuing radio licences.

The Yellowknife office was established in November 1974 and currently employs a staff of five. The DOC district office in Whitehorse was established in 1966, and is now being considered as a potential site for a northern DOC monitoring station. The third district office, located in Fort Smith, has in addition to its district operations responsibility for the management of a monitoring station.

Financial Contributions

DOC continued to provide financial support to CN Telecommunications (CNT) for operation of a telecommunications system in the Mackenzie Valley. Assistance this year amounted to \$125,000.

In the Eastern Arctic, CNT has operated the federal troposcatter terminal at Frobisher for many years, under contract with DOC. During this fiscal year, CNT received a sum of \$220,000 to provide communication services between Frobisher and locations in southern Canada, via this terminal over the Polevault North System.

Satellite Services

By the end of the 1974-75 fiscal year, the CBC could report that more than 20 communities north of the 60th parallel were receiving live network television programming in colour. CBC now leases three satellite channels from Telesat Canada on a full-time basis and is also making occasional use of a fourth (approximately 1,000 hours per year).

On May 1, 1974, the CBC broadcast live segments of a major TV production from Resolute and Frobisher to the rest of the CBC network. The program, Inukshuk, was the first live public TV broadcast from the far North and showed that TV transmission from northern locations can be achieved with success. Less than a year later, live TV transmission was provided from Yellowknife for the opening of the Berger Commission Hearings, via the 26 foot AniKom earth station usually providing receive TV service.

It has recently been demonstrated by Telesat Canada that the transmission of both TV and radio programming through a single satellite channel is technically feasible. This provides a new dimension to regional broadcasting, as it allows a TV and a radio program originated from different locations to be both transmitted simultaneously over the same satellite channel. Successful tests were conducted by Telesat Canada to demonstrate the transportability of a 10 foot

AniKom terminal, at some northern locations: Yellowknife, Strathcona Sound and the Ministry of Transport weather station at Issaachsen. The use of the Time Division Multiple Access (TDMA) system was tested successfully by Telesat Canada and will shortly be put in use for commercial operation. This technique increases the satellite channel capacity for voice circuits. This same concept has been applied with success to allow the simultaneous transmission of two television programs. The utilization of the Frequency Modulation technique has also been successfully demonstrated for this purpose.

Most satellite circuits between communities in the North and locations in the South are routed via Allan Park (Toronto), where they are connected to the switched network. Due to the relatively small number of telephone subscribers in the North, the revenues derived from these subscribers could not sustain the expenditures required to provide the necessary service. Recognizing this fact, DOC has entered into an agreement with Bell Canada to fund a portion of the total cost of providing such service by guaranteeing the carrier a minimum annual revenue from government users. This incentive has contributed towards the introduction of a Thin Route service which is now available in nine communities of the NWT. The DOC contribution to this Northern service will be reduced as the satellite usage increases.

Bell Canada is using one channel of the Anik 1 satellite to serve Resolute and Frobisher and it can also serve other locations with a similar heavy traffic demand. A second channel provides Bell Canada's Thin Route service to remote and northern communities, nine of which are located in the Northwest Territories. Five locations in the NWT were cut into service during fiscal year 1974-75: Rankin Inlet, Sanikiluaq (Belcher Islands), Cape Dorset, Pond Inlet and Eskimo Point. Each of these communities is equipped with a 26 foot AniKom earth station. At Rankin Inlet, shortly after this new service went into operation, Bell Canada decided to add some satellite circuits to accommodate service requirements. Bell Canada is using transportable AniKom earth stations transmitting over the second Anik channel to meet the particular telecommunications needs of resource exploration companies. On September 18, 1974, a transportable 12 foot AniKom earth station went into operation at Rea Point (Melville Island), 100 miles west of the North Magnetic Pole, to provide voice, facsimile

and teletype service between the base camp of Panarctic Oil Limited and their Calgary head office.

Terrestrial Services

In addition to their utilization of the Anik satellite facilities, the carriers also make use of terrestrial installations to provide communications services to the North.

CN Telecommunications operates in the Yukon and in the NWT west of 102° longitude and provides public telephone service to these areas.

CNT has recently expanded its facilities along the Mackenzie Valley although the total capacity of the previous installations was not fully utilized. This expansion has been undertaken in part because of the possible construction of a Mackenzie Valley natural gas pipeline and the attendant communications requirements.

During fiscal year 1974-75, CNT made the following changes to its microwave systems:

- the new Fort Simpson — Norman Wells 300-channel capacity system was completed;
- the Inuvik — Arctic Red River system was expanded from 120 to 300-channel capacity;
- the Hay River — Pine Point system was upgraded from 24 to 300-channel capacity.

The expansion of CNT facilities has resulted in the provision of satisfactory telephone service to most communities located along the Mackenzie River. At present, 24,523 telephones, including 16,507 main stations, are served from a total of 58 telephone exchanges. This represents a 12.5 per cent increase in main stations over the previous year. The number of completed long-distance calls increased by 25 per cent over last year.

In late 1974, CNT put into service new telephone exchange facilities at Hay River and Inuvik; new buildings were constructed to house these exchanges. Both plants include modern C-1 EAX exchanges, the first Canadian-designed electronic system developed specifically for small to medium-sized service areas. Telephone exchange expansion or replacement projects were also undertaken at: Cassiar, Cambridge Bay, Faro, Fort Providence, Fort Smith, Haines Junction, Mayo, Mucho Lake and Watson Lake. Telephone and Telex services were extended to the Northern Canada Power Commission's second hydro-electric project

at Snare River, 80 miles north of Yellowknife.

Expansion of the Direct Distance Dialing (D.D.D.) service in the North was confined mainly to the Great Slave Lake area as a result of equipment being installed at Hay River. The subscribers in the communities Yellowknife, Hay River, Fort Smith, Fort Simpson and Pine Point can now originate D.D.D. calls. In the Yukon Territory, this service was expanded to include the community of Mayo. Through these additions, the proportion of subscribers in CNT area now having access to the D.D.D. service has increased to 78 per cent. Public mobile telephone service was expanded through the provision of additional base station facilities at Arctic Red River, Rat Pass, Ebbutt, Wrigley, Saline River, Fort Norman, Fort Good Hope and Minto. Reliability was improved at other existing base stations through the replacement of tube type equipment with solid-state equipment.

In addition, the following modifications were made to CNT radio systems:

- the Faro — Ross River system was upgraded from two to 60-channel capacity;
- the Lady Franklin Point to Coppermine system was upgraded from four to 24-channel capacity;
- the Whitehorse-Atlin system was upgraded from one to 60-channel capacity;
- the open-wire land line between Stewart Crossing and Dawson City was replaced with a 60-channel capacity radio system.

The Troposcatter System between Arctic Red River and Galena was upgraded from 7 to 120-channel capacity. Finally, in order to improve the quality of transmission, the CBC program service channels were upgraded from five kHz to eight kHz bandwidth throughout the Yukon and the Northwest Territories.

In addition to its use of the satellite facilities, Bell Canada installed a UHF radio system between the community of Coral Harbour and the airport on Southampton Island.

Plans for 1975-76

Northern Co-ordination

The integrated VHF network recommended by the Yukon Territorial Communications Project Team will be built beginning in 1975-76 with completion scheduled for the last quarter of 1977.

Management of Radio Frequency Spectrum

As an aid to northern communities, DOC is now developing a simplified version of its

application form for a Technical Construction and Operating Certificate. This will implement the CRTC simplified application form for remote broadcasting undertakings, that was introduced in 1974. It will be part of a departmental procedure designed to establish easy-to-meet technical requirements for low power broadcast and speed up processing of applications in this category. The new DOC form should be available in the later part of the 1975-76 fiscal year.

Financial Contributions

The DOC has requested CNT to discontinue operation of the troposcatter terminal at Frobisher. The installation of a Northern Telecommunications earth station at Frobisher in 1973 substantially reduced CNT's revenues from the operation of the terminal, while the overall costs continued to rise. Another factor involved in the decision is that the troposcatter terminal is linked to the Polevault North System, which the U.S. Air Force plans to cease operating as of July 1, 1975. Accordingly, the DOC has requested CNT to close the station shortly after all users are able to meet their telecommunications requirements by leasing the new common carrier facilities. All local and governmental requirements in this area are now serviced by the Anik satellite facilities.

Satellite Services

Some new northern communities will receive CBC television and radio broadcasting services via the Anik satellite facilities, under the CBC Accelerated Coverage Plan (for elaboration, see the CBC section in this report).

An additional northern location to receive Bell Canada's Thin Route service via Anik facilities will be designated in 1975, following negotiations currently ongoing between the carrier, Telesat Canada and the Federal and Territorial governments.

CNT plans to start utilizing Anik satellite transmission facilities to improve telecommunications services in three Western Arctic communities served only by HF radio systems: Sachs Harbour, Holman Island and Snowdrift. Local telephone exchanges will be installed at Holman Island and Snowdrift (a local exchange already exists at Sachs Harbour) and long-distance telephone service will also be provided. For this purpose, CNT will lease a portion of Bell Canada's northern service second channel and will lease the

necessary ground station equipment from Telesat Canada.

Following its launch in May 1975, Anik III will be positioned in geostationary orbit, 5° to the east of Anik II, at 104° West longitude in line with Regina. This will increase the space capability of the domestic satellite system to a level where any northern communications requirement could be technically met.

The Communications Technology Satellite (CTS) is scheduled to be launched in late 1975. This experimental, non-commercial satellite is expected to be used, in the following two years, by various organizations to conduct technical and social development experiments. The Bell/Telesat technical experiment, the first to be conducted in the NWT, will take place in the Frobisher area for 15 weeks, starting early in 1976. It will test the main features of small portable two-way voice terminals, using the high powered travelling wave tube of the CTS. The technology tested may be suitable for seasonal work camps, emergency operations, remote origination of broadcasting signals and other applications where signals may be required from remote locations on a short-term basis.

Terrestrial Services

In the Eastern Arctic, Bell Canada plans to provide HF radio service between Frobisher and a new central office at Broughton Island. The Ministry of Transport (MOT) has started leasing private lines on some AniKom earth station sites, allowing the installation of automatic repeaters to improve their ship-to-shore communications in the far North. The first unit will be installed at Cape Dorset and will provide a reliable radio link with MOT facilities at Coral Harbour. Two more sites will be similarly equipped in the near future.

In the area served by CNT, general expansion of local and long-distance facilities will continue. Paulatuk will have local dial service, with long-distance service via the DEW Line facilities. A 50-line exchange will be installed to serve Pelly Crossing. Party line service is scheduled for Indian communities in the Hay River and Yellowknife exchange areas. D.D.D. service will be introduced in the Fort Nelson area, thus increasing the proportion of subscribers in CNT area having access to this service to 90 per cent. A public mobile base station will be installed at Dawson City.

Long-term Plans

The Department of Communications' long-term aim is to extend communications frontiers so as to eliminate regional disparities and to ensure that at least basic communications services are available to all Canadians. In its long range planning, the Department is paying particular attention to the impact of communications systems on Canadian cultural and social values and the quality of life in Canada, as well as on the Canadian economy.

CNT plans to expand the local dial service at Whitehorse by installing an electronic stored-program control telephone exchange. The existing step-by-step toll switching equipment will be replaced by electronic equipment and the cord-type switchboards will be replaced by modern toll positions, equipped with semi-automatic Cathode Ray Tube displays.

The last link of the CNT's microwave system between Hay River and Inuvik will be completed with the installation of a section between Norman Wells and Inuvik capable of carrying 300 channels. In turn, this Mackenzie Valley system will be connected to the Grande Prairie-Alaska microwave system through the construction of 960-channel capacity link between Fort Simpson and Fort Nelson, B.C. Upon completion of these plans, the Mackenzie Delta will have diversity routes via Whitehorse, Fort Nelson and Hay River.

CNT is developing plans and estimates for inclusion in its 1976 capital budget, to extend local exchange and long-distance telephone service via terrestrial facilities to four other communities: Lac La Martre, Rea Lakes, Nahanni Butte, and Jean Marie River. Commencement of service is planned for mid 1977.

DEPARTMENT OF ENERGY, MINES AND RESOURCES (EMR)

MINERAL DEVELOPMENT SECTOR

Responsibilities

Minerals and mining play a significant role in the Canadian economy. The industry accounts for nearly one-third of Canada's total exports, and mineral output alone contributed nearly 8.5 per cent directly to the gross national product in 1974, a proportion that is multiplied when the total purchases of goods and services by the mineral industry are considered. In 1973, the Territories produced minerals valued at \$310 million out of a total value of nearly \$5 billion for all Canada.

The Mineral Development Sector provides the Department of Energy, Mines and Resources with resource use and policy advice based on systematic intelligence and analysis of the contribution of minerals to the Canadian economy.

One of the Sector's major responsibilities during the past fiscal year has been the development and initiation of national mineral policy. Many activities within the Sector are designed to support this responsibility, and include, in part, such programs as: collection and publication of data and information of mineral resources, mining activities, and mineral legislation; research and analysis of the mineral industry on a commodity and industry basis, and in a regional, national, and international context.

Mineral development in the two Territories is the primary responsibility of the Department of Indian Affairs & Northern Development. EMR assists and advises IAND on matters concerning minerals and mining development in a national and international context with respect to Canada's North.

Review of 1974-1975

During 1974-1975, the Sector continued to be the focal point for the intergovernmental development of a mineral policy for Canada. During the year, provincial deputy ministers of departments having an interest in mineral development and their officials, met on a number of occasions with counterparts in both EMR and IAND to consult on mineral policy development. This activity culminated in a meeting of federal and provincial ministers in December 1974, at which time it was agreed, among other things, that the document "Towards a Mineral Policy for Canada (Opportunities for Choice)", would be released under the authority of the ministers. It was published in early 1975, and the ministers affirmed that a major emphasis for mineral policy would be that mineral development should, as a first priority, form the basis for industrial and economic diversification in Canada. This policy is of special significance in planning the government approach to northern mineral exploration and production, and to company proposals for mineral exploitation.

The Sector conducted a number of social and natural environmental studies either "in house" or in conjunction with other federal departments. These projects have particular reference to the North, but are nationwide in total concept, and include:

- studies on problems related to the shortage of manpower in the mining industry, especially in remote locations,
- a study of the environmental and economic effects of pollution controls on mineral industry operations, in particular mining and smelting operations, with an overall emphasis on cost influences.

The Sector continued to represent EMR on various government committees concerned with the North. These included the Advisory Committee on Northern Development and several of its subcommittees, including the EOS (ice-strengthened vessel) Project Working Group; the Advisory Committee on Northern Roads; the Northern Roads and Airports Administrative Group; the Project Evaluation teams responsible for examination and formulation of recommendations concerning the Arvik and Nanisivik projects in the North, and other committees and working groups.

The Sector provided technical advice and recommendations to the Departments of National Revenue and Finance on taxation matters relating to the mineral industry under the Income Tax Act — the benefits accorded to the mineral industry are, of course, also applicable to mining operation in the two Territories. The effects of federal and territorial legislation on the mineral industry are constantly under review. During 1974, the Department provided services to the Foreign Investment Review Agency on matters related to policy considerations and implementation of the FIRA. Officers of the Mining Industry Financial and Corporate Analysis (MIFCA) Division examined feasibility studies dealing with the Arvik and Nanisivik proposals.

The Resource Evaluation and Regional Development Sections of the Sector continued to provide information to departmental personnel who participate in interdepartmental activities relating to the North. As a special project, a manual was compiled designed for federal government use, of terminology and definition of reserves and resources of metals, industrial minerals and

goal. This manual was circulated to provinces in the hope that uniformity of procedures may be attained by governments throughout Canada. A major study was largely completed that was designed to provide a framework for the use of resource managers who have to select areas for mineral development and are required to assign priorities among them; while national in scope, the report is of importance to the North. The study presents much information useful to planners, such as:

- the requirements for Canadian mine output of major metallic commodities to the year 2000, to meet forecast domestic and export demands,
- forecasts of supply from relatively assured sources, to the year 2000, numbers and magnitude of new mines required to the year 2000, to meet forecast demands,
- the levels of exploration expenditures required, to the year 2000, to make the necessary new discoveries,
- forecasts of mine openings and closures to the year 2000,
- a map of identified mineral deposits in Canada,
- the potential for new mines in current mining regions,
- the relative potential for undiscovered mineral resources in given areas of the Canadian land mass,
- mining labour that is likely to be needed, to the year 2000, at the forecast levels of supply,
- flows of mine products to Canadian and foreign smelters or consumers.

Updating and revision of the Yukon and Northwest Territories sections of the National Mineral Inventory proceeded throughout the year. A record is maintained of all new mineral discoveries, and of developments associated with previously discovered mineral occurrences and producing orebodies. The inventory at the end of 1974 contained approximately 500 and 1,200 individual deposit descriptions for the Yukon and Northwest Territories respectively. The information is made available to the Department of Indian Affairs and Northern Development in Ottawa and to the resident geologists at Whitehorse and Yellowknife. All mineral resource companies and other interested parties have access to information contained in the inventory.

Commodity Officers of the Sector participated in various activities as they related to mineral development in the North, including

assessments of two base metal mining operations (Arvik and Nanisivik) in the Arctic Islands as well as zinc reduction facilities in the Yukon. The officers were particularly concerned with demand for the mine products on world markets and the degree of further processing of these products that could be carried on domestically. The position of Canada's industries in these international markets and the question of domestic supply to Canadian processing facilities remain prime considerations in relation to mineral development of the Canadian North.

Plans for 1975-76

The functions and activities of the Sector will remain essentially the same during the forthcoming year. Officers will, as they have in the past, continue to participate in special studies involving national mineral and energy policies, and in programs to implement these policies in the provinces and the Territories.

The Sector will also continue to monitor developments of the mineral industry in relation to the North, both nationally and internationally, in anticipation of continued involvement in studies of transportation development along the Mackenzie Valley and in the southern Yukon.

Officers will continue to involve themselves in seminars and conferences concerned with all aspects of mineral development in the North, and to carry out field investigations and inspections as necessary.

Long-term Plans

The Sector anticipates close cooperation with appropriate divisions of IAND in the continuing evolution of national mineral policy and all associated activities, as well as participation and input into specific programs and proposals of mineral development in Canada's North.

EARTH PHYSICS BRANCH

Division of Seismology

Responsibilities

The Division of Seismology is responsible for determining the parameters of all significant earthquakes in northern Canada, providing assessments of seismic hazards, and studying all thermal aspects of permafrost. Research in the Arctic lithosphere is conducted by deep-sounding experiments (often in cooperation with the Polar Continental Shelf Project), by surface wave dispersion

studies and by geothermal methods. Studies of the source mechanisms of moderate and large earthquakes in active seismic zones provide data for investigations of tectonic processes and for calculations of expected strong ground motions required for aseismic design of critical structures. To meet these objectives, a network of seismograph stations is maintained in northern Canada; field experiments on deep seismic sounding and microseismicity are conducted; in co-operation with industry and other government agencies, boreholes are preserved and thermal measurements made.

Review of 1974-75

Standard seismological observatories were operated at Alert, Mould Bay, Resolute, Frobisher, Inuvik, Yellowknife, and Baker Lake. Regional observatories continued operation at Whitehorse, as did the strong motion seismograph at Fort McPherson. The Yellowknife seismological array continued operation with the on-line digital detection processor (Canadian Seismic Array Monitor; CANSAM) becoming fully functional. The CANSAM output was assessed in terms of seasonal variations in detection thresholds.

Routine analysis of all detected earthquakes occurring in the Canadian North has continued and a new service was initiated for the 1974 calendar year which provides bi-monthly lists of all detected earthquakes within about six months of their occurrence. Data reduction has also been completed for annual earthquake catalogues for three previous years. Special theoretical and experimental studies of regional seismicity, seismic risk, and design earthquake ground motion along proposed Mackenzie Valley Pipeline routes has been completed for the Environmental-Social Program, Northern Pipelines; monitoes; monitoring of the seismicity of the region will continue as part of the national program.

The long-range refraction data from the 1973 cooperative project with the Geological Survey in the Sverdrup Basin has been integrated with previous data and analyses are continuing to determine a crustal profile for the region.

Field work continued on the physical aspects of permafrost at 40 deep sites in northern Canada drilled by the resource industry and preserved by the Branch. One of the new sites was Gulf *et al.* Neil 0-15 at 80°45'N and 83°05'W. The determination of permafrost thickness at this location is believed to be the most northerly in the

world. Studies of the shallow permafrost in the Mackenzie Valley have been completed and emphasis is switching to the Arctic Islands. As an introduction to the near-surface aspects of the thermal regime in the Arctic Archipelago, a workshop was held to which experts were invited from across Canada. Measurements of the thermal properties of frozen rocks and soils are continuing. Experimental work on permafrost degradation in the Beaufort Sea was commenced in conjunction with the Geological Survey.

Plans for 1975-76

The present seismological observatories will be maintained and a new regional observatory will be installed and operated at Igloolik with assistance from the staff of the Igloolik Research Laboratory. Developments of the Yellowknife CANSAM system will continue with an automatic dialing facility that will transfer detected event information to Ottawa on a daily basis for further dissemination to international agencies. Analysis of earthquakes occurring in the Canadian North will continue on a current basis and the final two outstanding annual earthquake catalogues will be produced.

Studies of Arctic seismicity and seismic hazards will include general interpretations of seismicity patterns and attempted correlations with geologic and tectonic features, analyses of the spatial and temporal distributions of earthquakes in active areas of Baffin Island and the Queen Elizabeth Islands, and source mechanism and focal depth studies of moderate to large earthquakes in some of the regions.

Two deep seismic sounding experiments are planned for the spring of 1976. A project will be conducted in conjunction with the Arctic Ice Dynamics Joint Experiment to determine seismic velocity, anisotropy and lithospheric structure in the Beaufort Sea. A 200-km refraction experiment from Tuktoyaktuk into the Beaufort Sea will be carried out in cooperation with the Polar Continental Shelf Project to assist the interpretation of gravity anomalies and to determine the upper crustal and lithospheric structure on the continental margin.

The program of geothermal studies will continue to keep pace with increasing resource development. A new approach using combined geophysical and thermal data will be attempted, in cooperation with LAND, to produce a preliminary isopach map of permafrost distribution. Work will

commence on an assessment of permafrost on the sea bottom of the Arctic straits and channels.

Long-term Plans

The seismological observatories will be maintained and kept technologically up to date. New regional observatories are planned for Ellef Ringnes, Victoria and Baffin Islands to improve earthquake detection and location accuracy. Cataloguing will continue of all earthquakes detected in the Canadian North. Seismicity and earthquake hazard studies will be extended to other Arctic regions with some concentration on resource development areas and proposed pipeline routes.

Extension of deep seismic sounding studies of the Cordillera into the Yukon region is planned to investigate the northern Cordillera lithosphere structure and to attempt to explain patterns of geothermal anomalies and seismicity. Seismic sounding experiments in other regions of the North will be undertaken as required to assist interpretation of geological and geophysical phenomena.

A longer term target of the geothermal studies is production of maps of northern Canada giving permafrost distribution and thickness in a fashion adequate for a physical understanding of the distribution, and adequate for evaluation of proposed resource development. Part of this target includes knowledge of the distribution of terrestrial heat flow which is important in understanding the nature and composition of the lithosphere and the tectonic framework of northern Canada.

Division of Geomagnetism

Responsibilities

The Division of Geomagnetism is responsible for providing information on the direction and intensity of the earth's magnetic field over Canada and the neighbouring ocean areas. An important application is in all types of navigational charts. Other practical application arise from the magnetic properties of the rocks in the earth's crust. In addition to investigating large-scale geological structures by magnetic methods, the Division provides basic data for the more detailed commercial exploration of deposits of minerals, oil and gas. The magnetization acquired by rocks throughout their history is analysed in field and laboratory studies to learn when and how geological structures

were formed. The Division is also responsible for recording and analysing the more rapid variations of the geomagnetic field; the fact that much of the northern auroral zone lies within the Canadian landmass places on Canada a special responsibility in this field. Studies of rapid magnetic variations have practical applications in the North in the fields of telecommunications, the transmission of electric power over long lines, and the investigation of deep crustal structure by electromagnetic induction.

Review of 1974-75

Magnetic charts of Canada and magnetic declination values on air and sea navigation charts require continual up-dating to correct for secular change of the geomagnetic field. In 1974, the on-going program to provide data for revision of magnetic charts included: 1) a three-component aeromagnetic survey of over 50,000 line miles, with flight lines about 20 miles apart, over the District of Keewatin, Hudson Bay, Baffin Island and Northwestern Quebec as well as regions further south; 2) re-occupation of one magnetic repeat station in the District of Mackenzie.

Magnetic observatories were operated continuously through 1974-75 at Baker Lake, Cambridge Bay, Mould Bay, Resolute, Churchill and Poste-de-la-Baleine. A new observatory was installed at Yellowknife and is now operating as part of the Canadian network. Magnetic three-component recording stations were operated along a north-south profile of nine stations through Churchill from Winnipeg to Rankin Inlet in support of auroral and rocket research programs.

Electromagnetic induction studies of the crust and lithosphere were continued in 1974 with a profile of eight three-component recording magnetometer stations operating in April and May from central Banks Island across the ice-covered continental shelf to the deep water region of the Beaufort Sea. Two studies were published on the large induction anomalies centred near Mould Bay and Alert. Major magnetic anomalies have been delineated in the Arctic Islands, Yukon and the District of Mackenzie from data acquired in previous airborne surveys. Palaeomagnetic studies of rocks from the Slave and Superior Structural Provinces have shown that the intervening Churchill Province was not formed by plate style orogenesis. Two morphological studies of Pc5 geomagnetic pulsations recorded at

high latitude stations in Canada were published during the year.

Plans for 1975-76

A secular change survey will re-occupy 26 repeat stations in northern British Columbia, Yukon, and western parts of Northwest Territories including the Arctic Islands. Investigations of electrical conductivity in the crust and its structural implications will be continued by establishing a profile of eight to ten magnetic recording stations in the northern Yukon — Mackenzie Delta region in July. Induction effects in the deep ocean will be studied by operating a recording magnetometer at an AIDJEX base camp on the Beaufort Sea for a period of several months. Palaeomagnetic sampling is planned on the Cameron Bay volcanics and sediments of the NWT, the Rapitan Group of the Mackenzie Mountains and the Devonian red beds of Somerset Island. Many of these projects will be supported by the Polar Continental Shelf project. Four digital recording magnetometer systems will be installed and operated in the NWT on the Churchill line of stations in preparation for the International Magnetospheric Study program commencing in 1976. An additional station will be established at Shepherd Bay or Pelly Bay.

Long-term Plans

Three-component airborne magnetic surveys are planned to cover the North, including the Canadian sector of the Arctic Ocean, at intervals of a decade or so. Some magnetic repeat stations are re-occupied at five-year intervals in a continuing study of permanent magnetic secular variation. The history of the formation of the Arctic Basin is to be studied using palaeomagnetic data from the Arctic Islands, as well as the magnetic anomalies revealed by airborne surveys, and further field investigations of the northern edge of the Precambrian Shield will be made by electromagnetic induction. The network of permanent magnetic observatories will be supplemented by unattended automatic recording stations, especially during the International Magnetospheric Study, 1976-1978.

Gravity Division

Responsibilities

The Gravity Division is responsible for completing the regional gravity survey of the Canadian North. This work is performed in cooperation with the Polar Continental

Shelf Project of EMR. Precise observations of gravity provide basic data for the mineral exploration industry, for basin studies and for studies of the earth's crust and upper mantle; in addition these observations provide data for studies in physical geodesy and supply a need of the Department of National Defence. The Division is also responsible for maintaining gravity standards in Canada's North by establishing a first-order gravity network to serve as reference and control points for all other regional and detailed gravity surveys conducted in the North, and by maintaining a data bank of all gravity data which meet national standards. This division is also an active participant in the Arctic Ice Dynamics Joint Experiment (AIDJEX), through its program to measure horizontal and vertical movements of the Arctic sea ice. Precise observations of the earth tide are also made in Arctic regions as part of a program to determine the deep structure of the earth and the processes operative within these regions.

Review of 1974-75

Between June 1975 and the end of the survey in mid August, about 16,000 line kilometres of shipborne gravity measurements were made in the northern part of the Labrador Sea. Of this total, 10,300km lie within the survey area defined by latitudes 56°N and 62°N and longitudes 47°W and 63°W. An average track spacing of 32km was maintained during the survey. This survey was a cooperative project with the Atlantic Geoscience Centre, EMR, and the Canadian Hydrographic Service, DOE.

Using helicopters for transportation, 1,550 gravity stations were observed on the frozen surface of Amundsen Gulf during March and April. The area surveyed is contemporaneous with the shipborne surface gravity meter survey of 1973 and, combined with previous ice surface surveys, completes the coverage on the easterly and westerly approaches to the Gulf.

Following completion of the Amundsen Gulf survey, three days were spent in the Hassel Sound area, northeast of King Christian Island. Here, 165 gravity stations were observed along a seismic profile being established across the Sverdrup Basin by the Resource Geophysics and Geochemistry Division of the Geological Survey of Canada. Station locations were surveyed by the Geological Survey of Canada at approximately 1.5km intervals and depth soundings were made by the Canadian Hydrographic

Service of the Department of the Environment.

As part of an integrated study on mineral resource appraisal, co-ordinated by the Geological Survey of Canada, a detailed gravity survey was made over a prominent geochemical anomaly in the vicinity of Agricola Lake at 65° 36'N and 107° 55'W. Approximately 160 gravity stations were observed on a locally surveyed grid of profiles 300m apart, with station spacing varying from 10m to 50m along each profile.

In April, the western Arctic portion of the National Gravity Net was inspected. Twenty-two new control stations were established and monumented. Descriptions and gravity values for these and all the central stations are available on request.

In 1974, a study of the subsidence history of the Sverdrup Basin was completed. Most of the observed subsidence results from lithospheric response to loading. Studies of elliptically-shaped positive free air anomalies at the polar continental break suggest that these anomalies may be explained by wedges of Tertiary or Quaternary sediments which act as uncompensated loads on the crust. A regional study of the correlation between gravity anomalies and geology for a large part of the District of Keewatin was also completed in 1974. A detailed survey near Agricola Lake outlined a small positive anomaly associated with a sulphide body described by resource geochemists of the Geological Survey of Canada.

In 1974, some 350,000 existing gravity stations across Canada were compiled and machine contoured to produce a new edition of the Bouguer Anomaly Map of Canada. Other contributors of data to this map include the Atlantic Geoscience Centre, EMR, several oil companies and Canadian universities, and other agencies too numerous to mention individually. A gravity map of the Lincoln Sea area north of Ellesmere Island was also published as No. 114 of the Division's Gravity Map Series.

Preparation continued throughout 1974 for the Division's contribution to the AIDJEX experiment (see next section). Due to instrument failures, the Division's program to record the earth tide at northern sites was suspended.

On Devon Island an interesting structure named Haughton Dome has generally been regarded as a piercement dome mainly because of its core of evaporites and disturbed surrounding rocks. Shatter cones, definitive products of shock metamorphism, were discovered in limestones at Haughton

Dome and indicate that it is an ancient meteorite impact scar.

Plans for 1975-76

Operational plans for 1975-76 call for three major gravity surveys in the North. During March and April, approximately 500 stations will be established by helicopter on the sea ice west of Banks Island on a 6km grid. Bathymetric measurements will be made at each site by the Canadian Hydrographic Service, DOE. Some 800 stations will be established also by helicopter on a similar 7km grid on Victoria Island. This survey scheduled for July and August will complete the regional gravity coverage of Victoria Island. Both these projects will be completed in cooperation with the Polar Continental Shelf Project, EMR.

Sea-surface gravity measurements will be made during the period July-September in Hudson Bay. This project is part of a multi-disciplinary program planned by the Central Region, Canadian Hydrographic Service to commence in 1975. The program is long term (five to 10 years duration) and calls for the collection of bathymetric, geophysical, geological and oceanographic data. Initially, ship's tracks will be 45km apart to be followed by interlining in subsequent years to reduce the overall track spacing to 15 km or less. Two or more signature lines for calibration of the gravity measuring system will be established during 1975. The MOT ship *Narwhal* will be used as the platform for the measurements.

In 1975, the Division plans to inspect and monument where necessary the gravity control stations on Banks and Victoria Islands. This work will complete the inspection program for all areas of current resource exploration in the western Arctic. Updating of control stations in the eastern Arctic will be undertaken as warranted by demand.

Analysis and interpretation of gravity data collected in the North will be continued in 1975-76. Plans call for publication of at least two gravity maps of Amundsen Gulf in the DOE-EMR Natural Resource Map Series.

The Gravity Division will carry out ocean tilt and ice tilt measurements in the Beaufort Sea during the period March, 1975 to April, 1976. These studies, in support of the AIDJEX experiment, are directed toward a better understanding of the interaction between atmosphere and hydrosphere in the Arctic Ocean basin.

Long-term Plans

Long term plans for the Gravity Division's program in the North are to continue to map the gravity field at intervals of 15km or less over the land and water (ice) covered regions of northern Canada, to maintain a first-order gravity network in northern Canada, to develop and improve methods of measuring gravity under unstable conditions such as in ice-covered regions, and to study long- and short-term vertical and horizontal movements. When resources permit the program to record the earth tide at Resolute will be resumed.

GEOLOGICAL SURVEY OF CANADA

Responsibilities

The role of the Geological Survey of Canada is to provide a comprehensive inventory and understanding of the geological framework of Canada interpreted in terms of all national activities that make use of or are affected by geology. These activities include not only the search for energy sources and mineral deposits but also the geological aspects of those activities concerned with land use, urban development, increasing yields in forestry and agriculture, engineering projects and the conservation of our natural environment. Expanding populations and ever growing demands for energy and natural resources have heightened the need for a more precise knowledge of the geology of Canada and for a greater comprehension of geological processes for long-range planning and as a basis for enlightened decisions by government and industry.

The formal objectives of the Geological Survey comprise the geological aspects of the authorized programs of the Department of Energy, Mines and Resources and involve seven main thrusts:

- ascertaining Canada's energy and mineral resources;
- facilitating their exploration and development;
- promoting regional development in Canada;
- identifying and describing geological features and processes that affect environmental and ecological equilibrium, with special emphasis on the effects of the development of energy and mineral resources;
- identifying and studying features of the recent geological past and ongoing processes that affect the use of the landmass,

engineering design, urban development, and renewable resource industries such as forestry, agriculture and fisheries;

- identifying and assessing natural hazards (e.g. landslide-prone areas), and
- disseminating information on the landmass of Canada and its surrounding continental shelves for use by other governmental agencies, industry and the general public.

These objectives are met by a wide range of activities which are grouped broadly into

Systematic Surveys

Regional Analyses, Syntheses and Processes
Correlations, Standards and Controls
Geoscience Exploration Guidelines and Technology
Resource and Terrain Evaluation
Data Base Management Systems
Support Services

Each of the 480 projects that formed part of the Branch's 1974-75 work was part of one of these activities but the results were often used to meet the needs of various programs.

Review of 1974-75

During 1974-75 about 170 of the more than 480 active projects of the Geological Survey were concerned with the area north of 60°. Not all involved field work nor were all parties with a field component in the field for the full season, but as has been true for some years more than half of the GSC's expenditures in dollars and man-years can be allocated to work in the Yukon and Northwest Territories.

Preliminary results of most of the 1974 field activities were released to the public on January 9, 1975 in the Geological Survey's Paper 75-1, pt.A (602 p.). Only highlights of some of these activities are presented in the following paragraphs.

The reconnaissance study of the St. Elias Mountains of the Yukon, carried out in 1973, resulted in more comprehensive but geographically restricted studies being initiated in 1974 with the objective of obtaining more precise information concerning the stratigraphy, structure and economic potential of these areas. Important revisions have been made in the geological interpretation of Dezadeash map-area, notably the discovery of early Palaeozoic volcanic rock, formerly regarded as Mesozoic, and the recognition of several major northwest trending transcurrent fault zones.

Mineral resource appraisal is becoming increasingly important and during the 1974 field season integrated studies on mineral resource appraisal were carried out in the Fechey Lake belt of the Northwestern Precambrian Shield. As reported in previous volumes of this publication a geochemical survey of 36,000 square-mile area of the Bar and Slave Provinces was carried out in 1972 and follow-up studies on some of the newly identified anomalies were made in 1973. One of the anomalies, that near Aricola Lake, was chosen for detailed geological, geochemical and geophysical studies. Subjects studied included a gravity investigation, studies of soil geochemistry, hydrogeological studies, surface lake-water uranium-radium surveys, a ground magnetometer survey and limnological investigations. Preliminary results are presented in a 38-page section of GSC Report of Activities, April to October 1er 1974, Paper 75-1, pt. A, p. 19-227.

Bedrock studies in the Precambrian Shield designed to upgrade older reconnaissance mapping to modern 1:250,000 scale standards in order to understand more clearly the geological evolution of the region and thereby the distribution and origin of the contained mineral deposits contained in many areas. Mapping continued in Melville Peninsula where three field parties were active. Arseno Lake map-area (86 B/12) was mapped for publication at 1:50,000 scale in order to better understand the evolution of a series of gneiss domes disclosed during regional mapping in 1972. Mapping of Calder River area (86 F) initiated in 1973 continued with completion expected in 1975. Sedimentary and volcanic rocks of the Goulburn Group and Yellowknife Supergroup of the Slave Province were studied in some detail.

Stratigraphic studies to further identify the geological framework of the Canadian Arctic were carried out in central Ellesmere and southern Axel Heiberg Islands, Grinnell Peninsula of Devon Island and on Banks Island. In addition to the regionally oriented studies in stratigraphy detailed studies were made in the fields of palaeontology and structural geology in order to assist in developing more precise stratigraphic correlations.

Aeromagnetic surveys were continued in several parts of the North. In the area bounded broadly by 88° to 104°W and 63° to 66°N, 33,888 line miles were flown. On

Melville Peninsula 27,022 line miles of production were obtained despite severe weather conditions.

Inventory mapping of Quaternary geology continued in many parts of the North. An integrated pilot mapping project on eastern Melville Island, initiated in 1973, and designed to gather and correlate basic data dealing with a range of environmental factors of possible concern for future terrain use was continued.

The wide range of data obtained has been plotted on airphoto mosaics and will be made available to the public in March 1975 as an Open File release. A terrain inventory and land classification of Boothia Peninsula and northern Keewatin (an area of 55,000 km²) was completed. Eight relatively distinct terrain regions distinguished by differences in surficial materials, physiography and bedrock types were identified. As Boothia Peninsula is a possible pipeline corridor the value of this study to planning groups is obvious. In conjunction with this study, a biophysical study was made with the assistance of an officer of the Soil Research Institute.

Geomorphological studies include studies of surface processes essential in an area where terrain sensitivity is so important. Such studies were carried out on Banks Island, northern Somerset Island and in offshore areas southeast of Melville Island and west of Byam Martin Island. Further observations were made on bottom scouring phenomena in the Beaufort Sea area. In view of possible offshore oil exploitation in shallow water regions and the probable construction of feeder pipelines on the bottom; there is a need for more detailed data on this subject.

Officers of the Branch continued to assist in assessing the impact of construction of the Mackenzie Highway on the environment of northern Canada. Among the topics on which advice has been given are: general routing of highway, source and quality of construction materials, selection of river crossing sites, erosion prevention and the stability of deep cuts and high fills.

Plans for 1975-76

Of the 430 projects being carried out by the Geological Survey of Canada in 1975-76, about 160 will involve work north of 60°, and 80 of these have a field component.

There are several Precambrian bedrock studies aimed at upgrading the former reconnaissance mapping to modern 1:250,000

standards and providing a basis for the interpretation and synthesis of the geology and for an assessment of the mineral potential. A helicopter-supported field party will continue the investigation of the rocks of the Mary River and Piling groups of the Foxe Fold Belt of central Baffin Island. The Archaean metasediments and metavolcanics and Aphebian and Archaean granitoid rocks of the Tulemalu Lake (65J) and MacQuoid Lake (55M/W 1/2) — Thirty Mile Lake (65P/E 1/2) map-areas, and their possible relationship to uranium mineralization will be carefully examined by separate field parties. These parties will cooperate with a Quaternary geology-uranium and drift prospecting techniques project in the lower Kazan River area (65P, 55M, and 56D). Further Precambrian regional studies and mapping will be undertaken in the Hackett River (76F/E 1/2) — Back River (76G/W 1/2) map-area, on the Archaean felsic volcanic complex near Regan Lake (76 B,C,F and G), in the Calder River (86F) and Sloan River (86K) map-areas, and on the sedimentary and volcanic rocks of the Goulburn Group near Bathurst Inlet.

An integrated field program on Victoria Island will include studies on the stratigraphy and petrology of the Natkusiak Volcanics, on the Hadrynian shales, on the palaeomagnetism of both rock units. The Lower Palaeozoic and the Precambrian rocks of northern Ellesmere Island (340 A,C,D,F) are the subjects of separate facets of a project. The preliminary logistics of this remote field were undertaken in 1974 and the field work will include a stratigraphic and structural cross section of the Grantland Mountains from Tanquary Fiord to Yelverton Bay.

Full scale field operations will begin on the northern Somerset Island part of Operation Boothia. The mapping of this key area for publication at a scale of 1:125,000 will provide a better understanding of the stratigraphy and structure to aid in resource evaluation and to provide background knowledge for possible pipeline construction. The field portion of a Quaternary geology-terrain inventory study of Somerset and Prince of Wales Islands will be completed, and will augment previous air-photo interpretation in the preparation of an open file report. Field studies on the Palaeozoic rocks of Cornwallis and adjacent smaller islands will continue.

A field party near Aklavik will continue work on the Firth River map-area as part of

the Northern Basin Analysis program, information which is required for a continuing evaluation of hydrocarbon potential. The field work will concentrate on detailed stratigraphic, palaeontological and palynological examination of key and type sections. The sub-ocean bottom bedrock in the Herschel Island-Mackenzie delta area will be surveyed by multi-channel marine seismic reflection profiling.

Field checks of critical areas of Operation Porcupine (parts of 106 and 116), Operation Norman (northern Mackenzie and Franklin mountains) and in the northern Yukon (parts of 117) will be made by small helicopter-supported parties.

In the southern Yukon, stratigraphic, structural and Cambrian biostratigraphic studies will be carried out in Selwyn and Pelly Mountains as a basis for understanding the widespread distribution of lead and zinc deposits within these regions that are currently undergoing vigorous exploration. Another study will investigate the Proterozoic stratigraphy of the Mackenzie, Wernecke and Ogilvie mountains.

The Geological Survey of Canada has ongoing projects concerned with the identification of favourable environments of mineral resources as a basis for determining the mineral resource endowment of Canada. The individual projects concern a single metal or group of metals in Canada and are seldom restricted to a geographic area.

Preliminary airborne gamma ray spectrometer surveys will be flown at 25-kilometre spacing over most of the District of Keewatin from 60° to 68° N as part of the national uranium reconnaissance program. Preliminary uranium geochemical surveys will be carried out under contract in the Nonacho area east of Port Radium on Great Bear Lake. Orientation surveys in Southern Baffin Island and the Yukon, will determine the optimum type of geochemical survey and resolve such problems as suitability of methods with each area, type of sample to be collected, sample spacing, sample preparation, method of analysis and advisability of setting up a field laboratory.

Contract aeromagnetic surveys will continue in two main areas, Committee Bay to Queen Maud Gulf (56 M,N,O,P; 66 J,K,L,M,N,O,P,) and Melville Peninsula (46 J,K,L; 47 A,D).

Electrical mapping techniques such as 1P, VLF-FM and VLF- ρ , will be evaluated over geochemical anomalies in the Bear and Slave provinces, and marine resistivity and VLF- ρ in Mackenzie Delta (107 C,D) and Key Point

(117 D). An *in situ* permittivity meter will be tested under permafrost conditions at Tuktoyaktuk, prior to development of a radar sounding system for engineering purposes. Seismic and related geophysical measurements will be made on various frozen earth materials in the Mackenzie Valley (95, 96, 107 and 117) and the Arctic Islands (78). Marine seismic techniques to map offshore permafrost will be evaluated and sub-seabottom permafrost configuration in the Beaufort Sea will be mapped. The preliminary logistics will be completed for a seismic and gravity survey of parts of the Arctic coastal plain and continental margin.

The various terrain studies of the Geological Survey of Canada reflect a continuing concern for our natural environment. There is a program of standard geological mapping of surficial deposits and landforms as a basis for subsequent classification and assessment, of the terrain sensitivity and capability for use and development, particularly for pipeline routes. The surficial geology-terrain inventory project on Bathurst and Cornwallis Islands will be a multidisciplinary study involving cooperation with Forest Management Institute, Agriculture Canada and the Canadian Wildlife Service. The basic information to be acquired through completion of the surficial geology inventory mapping on Banks Island will be complemented by a field investigation to evaluate geomorphic factors affecting behaviour of materials. The field portion of an intensive study of the Mackenzie Valley Transportation corridor under the Environmental Social Program — Northern Pipelines will consist of more detailed studies of stratigraphic sections in northern Yukon (116 O,N). Surficial geology and geomorphic studies in marine areas will be carried out in southern Beaufort Sea and Barrow Strait.

The terrain geology studies are supported by geochronology, palaeontology and palynology which will require field work on Meighen and Bathurst Islands, and minor sample collection from other Arctic Islands.

A better knowledge of geological processes in the Arctic is required for a thorough understanding of the surficial geology and to be able to give better advice on construction problems. Drilling and geophysical measurements in areas of field operations will provide information on permafrost thickness. Two projects on Banks Island will study fluvial and mass wasting processes, and ground ice and slope processes. A study of coastal erosion and sedimentation and drift ice hazard in the nearshore zone in Barrow

Strait will continue. Sedimentary and geomorphic processes will be investigated in the Babbage River delta (117 O/3) and along the Yukon coast (parts of 117 A,C,D). The occurrence of permafrost and geomorphic processes of the Mackenzie Valley and Arctic will continue to be monitored.

Long-term Plans

In general the long-term plans of the Geological Survey north of 60° are similar to the total objectives of the Branch — to make available to government and other agencies and individuals the earth science data needed to facilitate the national use of the non-renewable resources available to Canada and to provide information on all aspects of the terrain with special reference to terrain use and hazards. Because of the greater federal responsibility north of 60°, a large proportion of the Geological Survey's effort is directed to this area.

In order to meet deficiencies in the Geological Survey's northern program, a considerable increase in the number of regional or special geological and geophysical surveys is planned. In addition the rate at which existing data are synthesized and interpreted (principal use — evaluation of non-renewable resources) will be increased.

If government is to develop national policies with regard to the development of offshore non-renewable resources, much more information is needed. A better balance between onshore and offshore components of present activities is needed.

Although in recent years the activities of the Branch have been directed to the search for and exploitation of energy resources, long-term plans also call for developing a greater understanding of the mineral potential.

As part of the Federal Government's Ocean Policy, the Geological Survey will undertake studies to determine the evolution of the Arctic Ocean basin and the significance of its history to the development and location of non-renewable resources. Such information will become of increasing importance if Canada's stand at the Law of the Sea Conference for increased management responsibilities for maritime nations accepted.

Earth science data on Canada's North is increasing rapidly and long-term plans call for the development of more sophisticated methods of data manipulation.

The National Bedrock Geological Reconnaissance should be completed by 1979 to minimum scale of 1:500,000 and more

detailed mapping (1:250,000 scale) to present standards of those parts of the Precambrian Shield north of 60° should be 75 per cent complete by the end of the century.

A 1:1,000,000 compilation series of surficial geology maps should be complete for the Mackenzie Valley by 1980 and for the Arctic Islands by 1990.

Aeromagnetic coverage at a scale of 1:50,000 (or equivalent) for mainland Precambrian Shield and Platform areas should be completed by 1980 and long-term plans will for an extension of this mapping to the Arctic islands and Yukon.

In the next five years bedrock studies at a scale of 1:250,000 will be continued at the eastern and western ends of the Sverdrup Basin, on Ellesmere Island and in those parts of Boothia Peninsula and adjacent islands underlain by post-Precambrian rocks. More detailed mapping of the late Precambrian sedimentary rocks of northern Baffin Island will be undertaken. Regional analysis studies will be carried out in order to provide analyses of specific areas by integration, correlation and interpretation of geoscience data thereby enabling an assessment of their economic and engineering aspects. A synthesis of the Quaternary geology of the Arctic islands region will be undertaken, studies in Quaternary geochronology will be made and the Northern Basin Analysis Program will be extended.

Experience has shown that many of today's experimental procedures will become standard operating techniques in the near future. Development of geological technology having particular application to the North will be continued including further research into the use of drift prospecting techniques and the feasibility of geochemical surveys in the Arctic islands.

During the next five years petroleum and mineral resource evaluation studies will be further extended in the Arctic islands.

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8 Geology of Bathurst Island Group and Byam Martin Island, Arctic Canada (Operation Bathurst Island), by J. Wm. Kerr, 1974. Map 1350A folded in pocket.

Bulletins

- 224 Carboniferous and Permian stratigraphy of Axel Heiberg Island and western Ellesmere Island, Canadian Arctic Archipelago, by R. Thorsteinsson, 1974.
- 227 The Bennett Lake cauldron subsidence complex, British Columbia and Yukon Territory, by M.B. Lambert, 1974.
- 229 Metamorphic and plutonic rocks of northernmost Ellesmere Island, Canadian Arctic Archipelago, by Thomas Frisch, 1974.
- 244 Middle Ordovician ostracoda from southwestern District of Mackenzie, by M.J. Copeland, 1974.

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- 74-1, pt. B Report of Activities, November 1973 to March 1974; contains 107 short reports of which 28 are concerned with the North.
- 75-1, pt. A Report of Activities, April to October 1974; contains 160 short reports of which 68 are concerned with the North.
- 73-9 Reconnaissance studies of Proterozoic and Cambrian stratigraphy, lower Mackenzie River area, District of Mackenzie, by J.D. Aitken, R.W. Macqueen, and J.L. Usher.
- 73-12 Some spores and pollen from the Christopher Formation (Albian) of Ellef and Amund Ringnes Islands, and northwestern Melville Island, Canadian Arctic Archipelago, by W.S. Hopkins.

- 73-34 Exploration for Archaean polymetallic sulphide deposits in permafrost terrain: An integrated geological/geochemical technique; Kaminak

Lake area, District of Keewatin, by R.H. Ridler and W.W. Shilts.

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Palynology of an Upper Cretaceous section, Horton River, District of Mackenzie, NWT by D.J. McIntyre.

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Geochemical studies in the eastern part of the Slave Structural Province, 1973, by E. M. Cameron and C. C. Durham.

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- No. 23 The Mackenzie Delta area, Northwest Territories, by J. Ross Mackay. (First published in 1963 as Geographical Branch Memoir 8.)

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| Maps | | O.F. 207 | Draft of airphoto-interpretation surficial geology map and 34-page report of Nadaleen River map-area (N.T.S. 106C). By K. E. Ricker. | Barringer Research Limited carried out multifrequency (VLF, LF and BCB) E-Phase airborne resistivity surveys over four areas in the Northwest territories. These surveys were conducted on behalf of the Geological Survey as part of the Environmental Social Program, Northern Pipelines. |
| 1373A | Geology, Wrigley, District of Mackenzie, compiled by R. J. W. Douglas and D. K. Norris. | | | |
| Open Files | | O.F. 208 | A geological map of the High Lake area (76 M/7) by W. A. Padgham, R. J. Shegelski, D. R. Hughes and C. W. Jefferson. | |
| O.F. 191 | Preliminary drafts of five surficial geology and land-form maps comprising Aklavik (107 B/W 1/2), Blow River (117 A/E 1/2 and W 1/2), Demarcation Point (117 C) and Herschel Island (117 D) map-areas, at a scale of 1:125,000, prepared by V. N. Rampton. | O.F. 209 | MacMillan River sheet, Yukon and Northwest Territories. Compilation by H. Gabrielse, S. L. Blusson and A. V. Okulitch, 1974. | O.F. 225 "Botanical Studies near the Mackenzie River, Northwest Territories", by C.D. Bird. |
| O.F. 193 | Upper Cretaceous stratigraphy, Yukon coastal plain and northwestern Mackenzie Delta, by F. G. Young. | O.F. 210 | Preliminary drafts of three terrain classification and sensitivity maps and legend of part of the northern Yukon Territory, comprising Trail River (106L), Old Crow (116N and O/E 1/2) and Bell River (116 P) compiled by R. L. Monroe. | O.F. 226 Unedited report on regional organic metamorphism in the Mesozoic strata of the Sverdrup Basin. |
| O.F. 199 | A compilation geological map of the White Eagle Falls (86 F/12) area, by W. A. Padgham, R. J. Shegelski, J. D. Murphy and C. W. Jefferson. | O.F. 211 | Cu, Zn and Ni in Till — Henninga — Kaminak — Quartzite Lake area by R. H. Ridler. | O.F. 227 "Botanical studies in the Yukon and Northwest Territories", by C. D. Bird. |
| O.F. 200 | Geology of Carmacks area, Yukon Territory by D. J. Tempelman-Kluit (1974). | O.F. 212 | Reconnaissance geology of Quiet Lake (105F), Finlayson Lake (105G) Sheldon Lake (105J) and Tay River (105K) map-areas, Yukon Territory. Compilation by D. J. Tempelman-Kluit. | O.F. 231 A list giving details of all suites of macrofossils, microfossils, palynological slides, petrographic thin sections and analytical reports from wells drilled in northern Canada that are at present available for study. This list to be revised periodically. |
| O.F. 203 | Porcupine Plateau and adjacent areas, northern Yukon and Mackenzie District, Northwest Territories by J. A. Jeletzky. | O.F. 220 | An unedited report of 15 pages and one figure in which is outlined a revised megafossil zonation of lower and middle Upper Devonian strata of the central and lower Mackenzie Valley, District of Mackenzie NWT by A. E. H. Pedder. | O.F. 232 Point Lake area (86H), District of Mackenzie, NWT by John B. Henderson. |
| O.F. 204 | Three bedrock and unconsolidated sediment thickness maps at a scale of 1:100,000 of the portion of Lancaster Sound between 86° 15'W and 90°W, plus two interpreted geological cross-sections. | O.F. 221 | Preliminary unedited geological maps showing bedrock geology of the northern parts of Mount Eduni (106A) and Bonnet Plume Lake (106B) map-areas, District of Mackenzie, NWT. Compilation by J. D. Aitken and D. G. Cook. | O.F. 233 Taxonomy palaeoecology and biostratigraphy of spores, pollen, dinoflagellate cysts and acritarchs from seven surface sections of Lower Cretaceous rocks on Horton River, District of Mackenzie, by W. W. Bideaux and D. J. McIntyre. |
| O.F. 205 | Drafts of 5 geological maps of Operation Stewart (northern Selwyn Basin), Yukon and District of Mackenzie. Includes N.T.S. 106A, B, C,; 105N, O. By S. L. Blusson. | O.F. 222 | Airborne resistivity surveys, Northwest Territories. During the period May 9-18, 1973, | O.F. 235 A report on the type section of the Lower Palaeozoic Franklin Mountain and Mount Kindle Formations, with data on their regional development over the Interior Platform, Franklin Mountains and northern Mackenzie Mountains, by B. S. Norford and R. W. Macqueen. |
| O.F. 206 | Drafts of 6 geological maps of part of Nadaleen River map-area, Yukon and District of Mackenzie. Includes N.T.S. 106/6, 7, 10, 11, 13, 14 and 15. By S. L. Blusson | | | O.F. 236 A report on measured stratigraphic sections and reconnaissance studies of the |

- geological structure in widely separated areas of Foxe Basin, Melville Peninsular and Baffin Island by H. P. Trettin.
- (F. 239) Geological maps at a scale of 1 inch to 200 feet of the High Lake Copper-Zinc deposit (76 M/7) and of the Indian Mountain Lake zinc-lead-silver-copper deposit (75 M/2).
- (F. 245) Palaeontological reports with biostratigraphic zonation of three wells drilled in the Arctic islands.
- (F. 246) Magnetic tape No. 1019 containing geochemical data derived from analyses of canned drilled cuttings from 14 wells from the Arctic islands.
- (F. 251) Geology of the Beaufort-Mackenzie Basin by G. J. Yorath, D. W. Myhr and F. G. Young.
- (F. 253) Upper Jurassic-Lower Cretaceous dinoflagellate assemblages from Arctic Canada by W. W. Brideaux and M. J. Fisher.

RESOURCE MANAGEMENT AND CONSERVATION BRANCH

Responsibilities

The Resource Management and Conservation Branch administers and manages the mineral resources underlying Hudson Bay and Hudson Strait. The Branch exercises comprehensive statutory authority and full regulatory control over the exploration for, and development of, offshore mineral resources in these as well as in other offshore areas under the jurisdiction of the Department.

The disposition of oil and gas exploration permits and production leases on Canada lands, both on land and offshore, is governed by the *Canada Oil and Gas Land Regulations*, which were promulgated under the *Public Lands Grants Act* and the *Territorial Lands Act*. Comprehensive statutory authority for controlling all oil and gas operations including the conservation of resources, the prevention of waste and pollution and the safety of personnel is provided

for by the *Oil and Gas Production and Conservation Act*.

Review of 1974-75

Exploration activities in the Hudson Bay and Strait regions were limited to the Bay itself this past year. The most significant operation was the successful drilling campaign undertaken by Aquitaine Company of Canada Ltd. and partners. In preparation for this program the *Pentagone* 82 semi-submersible drilling vessel, owned by Sea and Land Drilling Contractors, Inc., was specially strengthened for movement through thin ice floes and for possible freezing-in during the winter.

During the operating season, the unit drilled and abandoned two wells and completed the abandonment of another well, suspended since 1969. After abandoning Aquitaine *et al* Narwhal South 0-58 and prior to spudding Aquitaine *et al* Polar Bear C-11, the P-82 was moved to the Aquitaine *et al* Hudson Walrus A-71 location which it officially abandoned by plugging the well with cement and recovering the BOP stack which had been left securing the well since its suspension in October, 1969. The unit was ready for departure from the last location by October 20 and had cleared Hudson Bay and Hudson Strait by the end of the month.

A total of about 5,500 miles of seismic survey was conducted in the Hudson Bay this past season utilizing the airgun energy source, a non-explosive device. The major portion of this work, approximately 3,400 miles, was done for Shell Canada Limited by Geophysical Services Incorporated with the *M/V Hans Egede*.

Kenting Exploration Services Limited used the *M/V "Thorarinn"* for their Bay Quest '74 operation, a 1,800 mile seismic participation survey. In addition, they carried out a minor survey, less than 100 miles, for Canada-Cities Service, Ltd. The balance of miles surveyed, about 200, was done by *Compagnie Generale de Geophysique* with the vessel *Orion Arctic* for Aquitaine Company of Canada Limited.

The total cost of these 1974 programs was about \$18 million, bringing the cumulative total spent by industry on oil and gas exploration in the Hudson Bay and Hudson Strait regions to more than \$33 million.

Plans for 1975-76

The only activities foreseen for the coming season are geophysical surveys of

about the same magnitude and nature as those run the preceding year.

Long-term Plans

The Branch will continue to manage offshore mineral resources in those areas of the Canadian North administered by the Department in a manner consistent with the public interest and with special emphasis on:

- safety of human life
- preservation of the environment and prevention of pollution
- protection of marine life
- optimum physical and economic conservation of mineral resources
- optimum return for Canada from these resources
- co-ordination of offshore mineral resource activities with other uses of the offshore
- maintenance of exploration on a continuing and orderly basis.

As of March 1975, there were 572 Canada oil and gas permits covering 35,283,340 acres in the Hudson Bay and Hudson Strait regions under the administration of the Department of Energy, Mines and Resources.

Industry's future oil and gas exploration activities in Hudson Bay will probably be influenced to a large extent by their interpretation of available geophysical data in conjunction with the results of Aquitaine's 1974 drilling program.

SURVEYS AND MAPPING BRANCH

Responsibilities

The Surveys and Mapping Branch is responsible for developing and implementing national programs in surveying and mapping. These programs involve the following support activities:

- The production and maintenance of topographical and special maps for administration, economic, human and physical geography, resources management, scientific research, defence and recreational purposes;
- The reproduction and library services for aerial photography and remote sensing data;
- The administration of the cadastral (property) surveying of federal lands;
- The fulfilment of Canada's federal obligations regarding definition, survey and maintenance of political boundaries in Canada;



GEODETIC SURVEY
1974-75

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The establishment and maintenance of a national network of geodetic control for topographical, engineering, cadastral, navigational, communication, military, and scientific purposes;

The production and maintenance of aeronautical publications for civil and military aviation;

The support for other federal programs requiring a wide range of surveying and mapping services.

The five main components of the branch

Topographical Survey Directorate
 National Surveys Division
 International Boundary Commission
 (Canadian Section)

Geodetic Survey Division
 Map Production Directorate

The Director General of the Surveys and Mapping Branch is also the Chairman of the Interdepartmental Committee on Air Surveys, and the branch provides the Secretariat for Canadian Permanent Committee on Geographical Names.

GEODETIC SURVEY OF CANADA

Responsibilities

The Geodetic Survey is responsible to maintain and expand a framework of precise horizontal and vertical control, and to establish the lower-order control survey networks and special surveys required for other government agencies, industry, environmental studies, engineering and geosciences, national security, the national mapping program, and the orderly development of the North.

Review of 1974-75

The highway levelling program in the Yukon Territory continued, and a new first-order level line was established from Fairbanks to Carmacks, along Highway 9, and on Highway 3 from Stewart Crossing through Fairbanks to the Alaska border. The line from Fairbanks Crossing to Whitehorse was relevelled.

In the Northwest Territories, the Mackenzie River level line was extended south from the vicinity of the Blackwater River to approximately 60 miles north of Inuvik. In the eastern part of the District of Mackenzie and the western part

of the District of Keewatin, the existing network of horizontal control was improved and additional horizontal control established for 1:50,000 mapping program. Control for the 1:50,000 mapping program was completed in the mainland area immediately south of Boothia Peninsula and on Bathurst and Bryan Martin Islands. In the Northwest Territories, a major project was carried out to establish a highly accurate network of 35 Doppler satellite stations throughout the Arctic Islands; three stations were also established on the coast of Greenland in cooperation with Danish authorities. This new framework will provide a basis for improvement of existing horizontal control fabric throughout the area.

Plans for 1975-76

The Mackenzie River levelling project will be continued, and it is anticipated that the line will reach the vicinity of Arctic Red River in 1975. The Doppler satellite project will be continued in the western part of the District of Mackenzie and the Yukon Territory, to establish a highly accurate framework of control in the area. In the District of Franklin, the existing lower-order survey fabric will be extended and improved, and detailed horizontal control will be provided for the 1:50,000 mapping program on Melville Island, Prince Patrick Islands, Banks Island and the western portion of Victoria Island. Control for the 1:50,000 mapping program is to be established on the western portion of the Mackenzie District.

Long-term Plans

Long-term plans for operations in the North include the extension, densification and improvement of the horizontal and vertical control frameworks, the improvement and extension of the existing lower-order accuracy control survey networks, and the provision of control for the 1:50,000 mapping program in areas still unmapped at that scale.

A recomputation of the horizontal control networks in Canada is planned for 1978 to update the now inadequate 1927 North American Datum values. The purpose of the recomputation is to obtain the highest accuracy possible from the survey data, and at the same time to ensure that all survey networks are adequately integrated into the national reference system. Canada also plans to participate in the recomputation of North American networks from Panama to Greenland for international purposes.

INTERNATIONAL BOUNDARY COMMISSION

Responsibilities

To maintain, at all times, an effective boundary between Canada and the United States, and to determine the position of any part thereof when boundary questions arise between the two governments.

Review of 1974-75

Field parties of the Canadian and United States sections resumed work on the joint operation commenced in 1973-74 to recover and mark permanently the triangulation stations along the Yukon-Alaska boundary. The operation was concluded in 1974 with the completion of 500 km of boundary between the Yukon River and Mount St. Elias. This network of 250 triangulation stations was installed at high initial cost in the early 1900's to provide control for the boundary; it is extensively used today as a basis of surveys for resource development.

Long-term Plans

Maintenance of the international boundary, restoration of boundary monuments, and associated surveys on a required basis.

DIRECTORATE OF MAP PRODUCTION

Responsibilities

The Directorate is responsible for the drafting and printing of maps of the National Topographic Series; the production of small scale maps, aeronautical charts and flight information publications; the design and cyclic production of the National Atlas of Canada; the provision of cartographic support services to federal and provincial government departments, and to private agencies.

Review of 1974-75

The following new or revised National Topographic Series maps, in northern Canada, were printed in 1974-75:

- 2 multicolour maps at 1:50,000 scale;
- 14 multicolour maps at 1:250,000 scale;
- 229 monochrome maps at 1:50,000 scale;
- 122 photo maps at 1:50,000 scale.

In the field of small scale mapping, a revised edition of the map of Northwest Territories and Yukon Territory at 1:4,000,000 scale with shaded relief was published, along with a revision of the map of Northwest Canada showing

transportation facilities. In response to requests for bases for resource mapping, a program was initiated of extending the International Map of the World (IMW) Series, at 1:1,000,000 scale into northern Canada.

Publication of aeronautical charts and flight information publications was maintained. Products on scheduled cyclic revision include Visual Pilotage Charts, Enroute Charts, Enroute Supplement, Canada Air Pilot and Northern Supplement.

Printing of the Fourth Edition of the National Atlas of Canada in bound volume form was completed during the fiscal year. The first printing of 15,000 copies has been exhausted by advance sales, thus necessitating a second printing.

Cartographic services included preparation of a set of 27 territorial electoral maps for the NWT and YT Councils, and cartographic support services relating to studies on terrain sensitivity to the proposed Mackenzie valley pipe-line.

Toponymic work continued on revision of the gazetteers of Northwest Territories and Yukon Territory and on the publication of "Geographical Names of Northwest Territories".

Plans for 1975-76

Publication of 13 maps of the IMW Series in northern Canada is scheduled for the 1975-76 fiscal year, as is publication of the two northern gazetteers for the Canadian Permanent Committee on Geographical Names.

In the topographic map series a pilot multicolour sheet at 1:100,000 scale is scheduled for production, using computer-assisted cartography.

Long-term Plans

Long-term plans with regard to northern mapping are to assist in the publication of National Topographic Series maps, to complete mapping of northern Canada at 1:1,000,000 scale in the IMW series, to maintain production of small scale maps and to update aeronautical documents, and to provide cartographic assistance to other governmental agencies engaged in northern activities. In this program, computer-assisted approaches to cartography will be used to a steadily increasing degree.

Legal Surveys Division

Responsibilities

To carry out surveys for land or resource transactions connected with the administration and development of public or other lands.

To ensure the competence of the property surveys, land descriptions and plans made under the Canada Lands Surveys Act and other acts and regulations, and to manage such surveys on request.

To fulfil the federal obligations regarding definition, survey and maintenance of provincial and territorial boundaries of or in Canada.

Review of 1974-75

Yukon Territory

For the Department of Indian Affairs and Northern Development, summer residential subdivisions were surveyed at Constabulary Beach (66 lots), Tagish Beach (101 lots), Finlayson Lake (10 lots), Pine Lake (20 lots), Watson Lake (nine lots), and a residential subdivision was commenced at Mile 930, Alaska Highway (55 lots — to be completed in 1975-76). Prior to the subdivision survey at Constabulary Beach, topographic mapping of the area of the proposed subdivision was carried out, in order that the subdivision design might most suitably use the thickly-wooded area.

Individual lots were also surveyed for Indian residences at Whitehorse and Squanga Lake, and for a fire tower at Sanpete Hill. The survey was completed for road relocation of the Alaska Highway between Mile 912 and 924.

For the Territorial Government, the survey of the highway relocation through Dawson Airport was completed.

For the Department of Energy, Mines & Resources, a baseline was laid out at Whitehorse for the future calibration of electronic distance measuring equipment. An inspection and examination of the condition of the survey monuments in the Whitehorse Co-ordinate Survey Area was carried out. Co-ordinate control survey areas established in the major settlements in the North feature an integrated system of permanent reference monuments which can be used to facilitate and correlate in these settlements all future surveys required for engineering, mapping, cadastral and other development purposes. Because of the referencing role of these

monuments, extraordinary precautions, such as setting markers in cast iron wells beneath city streets, are taken in an attempt to ensure that they will not be disturbed by construction, grading or snow plowing work.

Northwest Territories

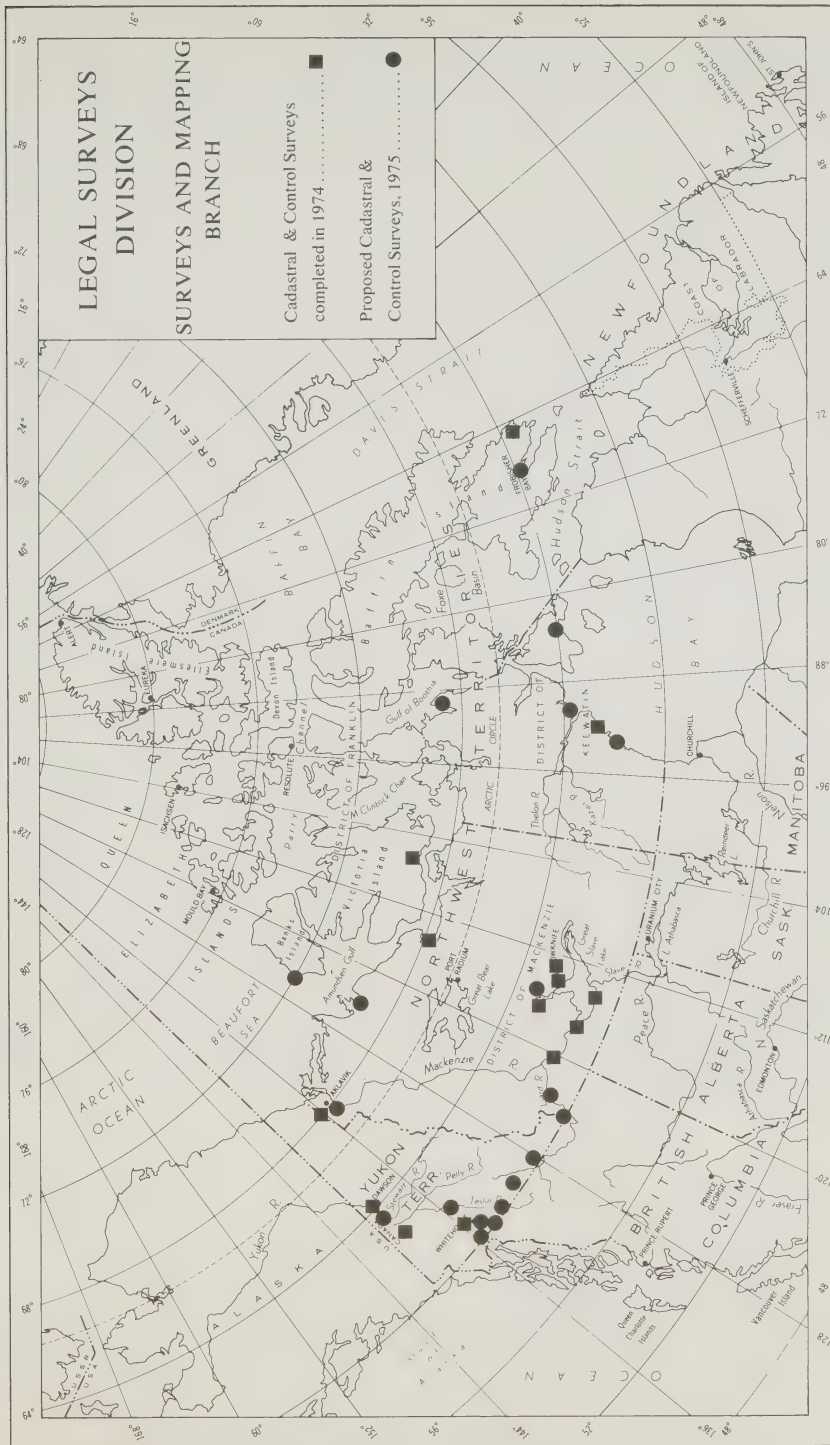
For the Department of Indian Affairs and Northern Development, the survey of the 52-square mile Indian Reserve at Hay River was completed; subdivision surveys were carried out at Inuvik (six lots, for land transfers between the Department of National Defence and the Government of the Northwest Territories), Pangnirtung (90 housing lots), Hay River (two church lots of the Indian Reserve), and Madeline Lake (11 cottage lots). Large single lots were surveyed at Swede Creek, Fort Good Hope and Franklin Channel, being fire tower and fuel cache sites for the Forestry Service. A survey was made at Cambridge Bay to determine the boundary between the National Defence property and the townsites.

For the Northern Canada Power Commission, a number of lots were surveyed for such purposes as power stations and fuel caches at Coppermine, Jean Marie River, Rankin Inlet and Pangnirtung.

For the Government of the Northwest Territories, a control survey along Highway No. 4 was extended eight miles into the town of Yellowknife. This survey will make possible photomapping along the highway at a scale of 1:5,000 as well as the provision of an orderly system of leases adjacent to the highway.

For the Department of Energy, Mines & Resources, a baseline aid out at Yellowknife for the future calibration of electronic distance measuring equipment; a large lot was surveyed around the seismic vault and cables of the seismic station at Yellowknife, enabling the transfer of the land from the Department of Transport to the Earth Physics Branch; and the commencement of the survey of the Co-ordinate Survey Area Inuvik.

This latter operation is of interest in that the monuments consist of standard steel survey posts drilled into the tops of wood piles, 20 to 24 feet long, which were set through the unstable soil into permafrost. The survey will be completed in 1975, after the piles have had a full year to become solidly frozen into the permafrost.



Plans for 1975-76

Yukon Territory

For the Department of Indian Affairs and Northern Development, the 55-lot residential subdivision at Mile 930, Alaska Highway will be completed, and surveys for cottage lots will be undertaken at Teslin Lake (30 lots) and at Lake Laberge (70 lots). In addition, there will be a resurvey of approximately 30 historic site properties in Dawson City for the National Parks and Historic Sites Branch, and a resurvey of the Indian Reserve at Lake Laberge for the Indian Affairs Branch.

For the Territorial Government, there will be a resubdivision of 23 residential lots at Golden Horn, and a resubdivision of 20 to 30 residential lots at Canyon Crescent.

Northwest Territories

For the Northern Canada Power Commission, the survey of one to four lots, for power plants, fuel sites and housing, at each of the following sites has been requested: Paulatuk, Sachs Harbour, Nahanni Butte, Fort Liard, Rae, Pelly Bay, Frobisher Bay, Coral Harbour, Whale Cove, and Chesterfield Inlet.

For the Royal Canadian Mounted Police, there will be surveys of one or two lots each for housing and office sites at Inuvik, Rae, Aklavik, Fort Franklin and Frobisher.

For the Department of Indian Affairs and Northern Development, nine forestry sites in the Mackenzie District, two lots in Nahanni Butte and one lot at Coppermine will be surveyed.

For the Department of Energy, Mines & Resources, the Co-ordinated Survey Area at Inuvik will be completed, and a new Co-ordinated Survey Area commenced at Frobisher. There will also be extension and densification of the Co-ordinated Survey Area at Yellowknife. Three or four pier-type monuments will be set in the Yellowknife area for the purpose of establishing a baseline for the calibration of steel survey tapes.

Long-term Plans

These are dependent upon the planning and development of other government departments, chiefly Indian Affairs and Northern Development. It is proposed to carry out subdivision surveys in the settlements in the North to promote and facilitate development of these areas. Similarly, surveys of group lots, camp sites and other parcels will be made along highways as

development is undertaken by the Territorial governments. The laying out of lots for airstrips, the location of navigational aids and similar work will be carried out in conjunction with the Ministry of Transport. Co-ordinate control survey areas will continue to be established in the major settlements in the North.

TOPOGRAPHICAL SURVEYS DIRECTORATE

Responsibilities

To produce and maintain topographic maps of Canada for general purposes at scales of 1:250,000 and larger, appropriate to the needs of administration, urban and resource development, defence and recreation; to provide a national library for aerial photography and remote sensing data, to promote their use and to provide a service for processing and reproduction; to provide technical and administrative support to the Interdepartmental Committee on Air Surveys.

Review of 1974-75

The two styles of 1:50,000 topographic maps introduced previously, the monochrome photomaps (Figure 1) and the monochrome line map (Figure 2) will continue to be produced for areas of northern Canada, where the majority of map users are trained in map reading. There is no degradation in the accuracy or amount of information portrayed on the monochrome line maps, but as only one colour is employed, some care is required in the identification of certain features. The photomaps are produced mainly in areas where a minute depiction of ground detail is required. This type of presentation is most useful in geological surveying and in oil and gas exploration.

In 1974, 12,256 line miles of Airborne Profile Recorder profiles were flown to complete the vertical control for 1:50,000 scale mapping on Victoria Island and in an area just east of Great Slave.

A total of 10,000 line miles of aerial photography for 1:50,000 mapping was flown in the Yukon and Northwest Territories. Indexes showing the present status of aerial photography may be obtained from the National Air Photo Library, 615 Booth Street, Ottawa, Ontario K1A 0E9. Topographic map indexes are also available from the Canada Map Office at the same address.

In the North, 149 new 1:50,000 line maps and 72 new photomaps were completed and one 1:250,000 and eight 1:50,000 maps were revised. In northern Quebec, some maps were revised by the addition of data located on the Earth Resources Technology Satellite (ERTS) imagery. This technique will also be used in the North whenever applicable.

During the year, the Directorate continued with its plan to carry out part of its new mapping program to the data base stage only. In the data base concept, aerial photography, field control computations and photogrammetric block adjustments are completed for all map sheets in the program but only those needed immediately are carried on to map compilation and completion. Data for the remainder is stored in digital form until specifically required for map compilation or engineering studies. This reduces response time to a request for a particular map or area.

Planning, monitoring and inspection of surveying and mapping contracts with the survey industry on behalf of various federal departments and agencies were carried out. Contracts for special aerial photography include:

- resources study, Wood Buffalo National Park;
- resources study, Baffin Island National Park;
- topographical mapping of Canol Road, Ross River, Y.T. to Norman Wells;
- hydrographic study, Liard River.

In the experimental field, work is being done on the production of an experimental coloured 1:100,000 scale map, which would be the largest scale mapping in colour in the North.

Plans for 1975-76

It is anticipated that 360 new 1:50,000 map sheets will be plotted by Topographic Survey during 1975 in northern Canada, and 110 photomaps (mostly quadrangles in the Mackenzie Delta and Northern Manitoba).

Aerial photography will be obtained for 1:50,000 mapping, possible pipeline routes in the Northwest Territories, and mineral development areas in the Yukon Territory.

Long-term Plans

The long-term plans of the directorate are:

- to increase substantially the present map coverage of Canada at 1:50,000 scale,

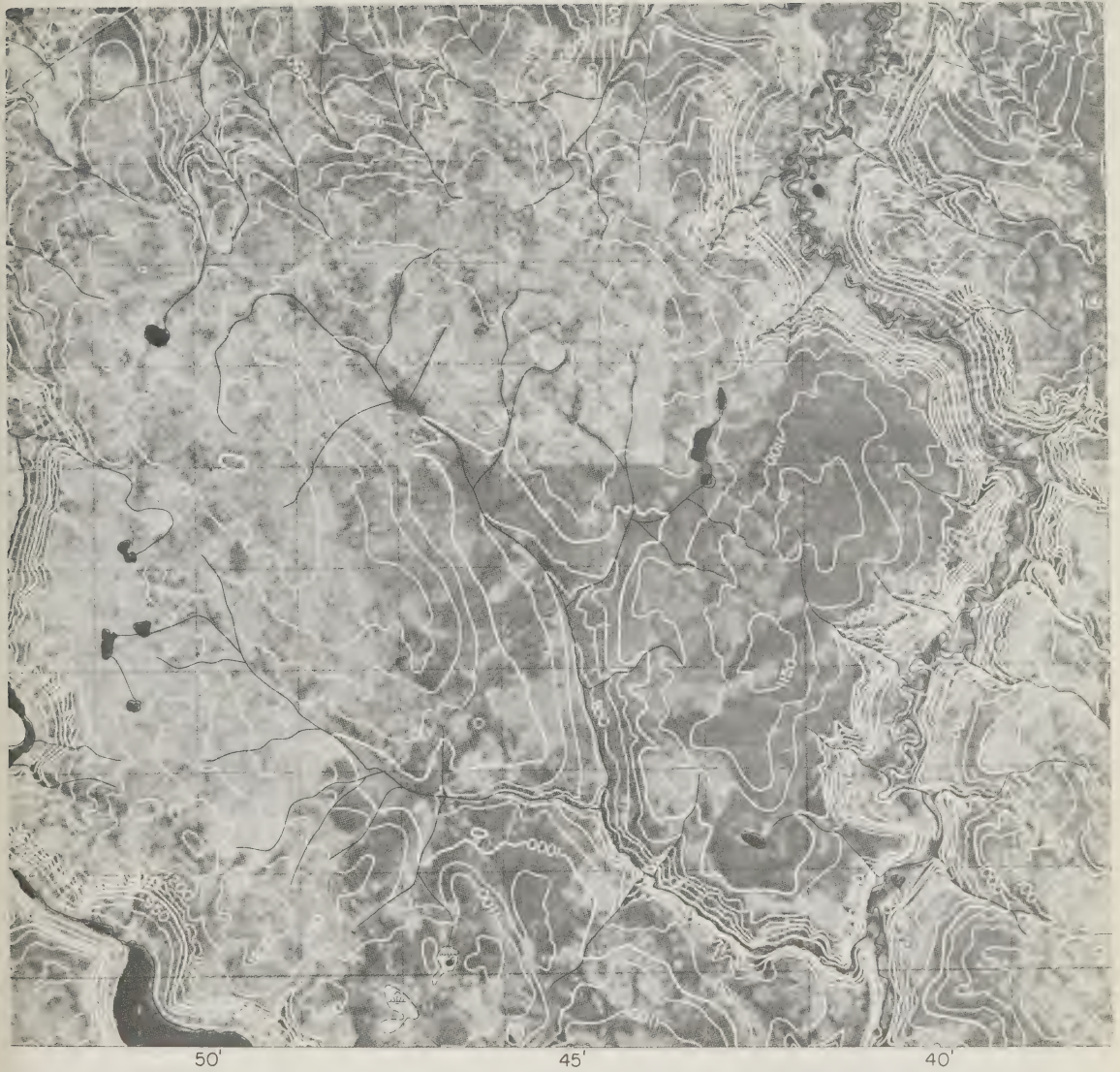


Figure 1

District of Mackenzie Northwest Territories

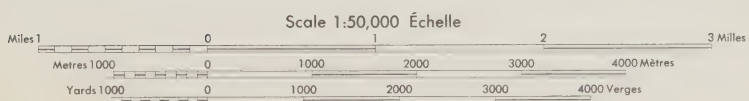
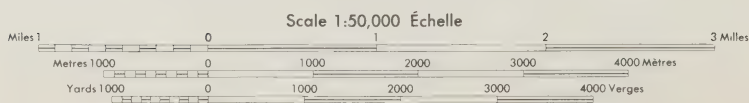




Figure 2

District of Mackenzie Northwest Territories



with areas of high resource potential being mapped first; to revise, where necessary, all published topographical maps.

The work involved in the production of new maps includes the identification of a network of points (spaced at about four-mile intervals) for which the precise latitude, longitude and height above sea-level are determined photogrammetrically. This network will cover all areas of the North, and though it will be used principally for mapping, it may have secondary uses such as the location of mineral claims, property boundaries etc. The completion of this network will take about four years.

THE CANADA CENTRE FOR REMOTE SENSING (CCRS)

Responsibilities

The Canada Centre for Remote Sensing is responsible for promoting and co-ordinating a national program of remote sensing designed to produce information for a fuller assessment and better management of Canada's environment and earth resources. The Centre's activities include airborne remote sensing, spaceborne remote sensing, research and development of new remote sensing devices, as well as development and demonstration of techniques for using remote sensing information systems.

Review of 1974-75

Airborne Remote Sensing

During 1974-75, one airborne remote sensing project was carried out in the Northwest Territories. This project was flown at the request of W.L. Pringle of the Inverlodge Research Station, Agriculture Canada. The objective of this project was to identify areas in the Slave River Lowlands where the concentration of salts in the soil would be low enough to allow the growth of forage and cereal crops. The sensors flown on this project included nine-inch and 70 mm cameras (used in conjunction with a variety of film and filter types), one infrared scanner, and one radiometer.

Because the northern operational capability of the Centre's current fleet of aircraft is limited, the Centre recently acquired a Convair 580 turbo prop long-range aircraft which has an operational range in excess of

2,500 nautical miles and which is capable of operating from runways existing in the North. In addition to providing the capability for remote sensing in the North needed by users, this new aircraft will also be capable of providing users with a platform for offshore remote sensing.

Spaceborne Remote Sensing

During 1974-75, the Centre received spaceborne remote sensing data from LANDSAT-1, LANDSAT-2, NOAA-2 and NOAA-3 satellites. LANDSAT-1 data consists of four bands of multispectral scanner data, while data from LANDSAT-2, launched in February, 1975, consists of four bands of multispectral scanner data as well as three bands of return beam vidicon data. NOAA data consists of two bands of very high resolution radiometer data.

LANDSAT and NOAA data of northern as well as southern Canada continued to be processed in Quicklook format, usually within 48 hours of satellite passes over Canada. Ertsfiche, a Quicklook microfiche product produced and distributed by Integrated Satellite Information Services Limited was also available throughout the year. The Ottawa data-handling centre processed the high resolution 1:1,000,000 scale LANDSAT multispectral scanner imagery of all four individual bands and in three-band colour composites. The Centre also supplied users with computer compatible tapes of spaceborne remote sensing data.

During the summer of 1974, timely LANDSAT and NOAA imagery data were transmitted experimentally to the Arctic for use by navigation and exploration companies. It was concluded as a result of this experiment that remote sensing imagery is of operational use in the Arctic for navigation through ice-infested waters. Low cloud LANDSAT imagery was useful in preparing ice forecast maps, and in some cases, in planning ship movements.

A contract to build a second remote sensing satellite tracking station was awarded this year. The 1.4 million dollar station will be developed by MacDonald Dettwiler and Associates for installation at Pouch Cove, Newfoundland. This station will be able to provide data for the eastern offshore areas of Canada including the Labrador Sea, data which cannot now be received and made available to users in a timely manner, given the limited range of the Prince Albert Satellite Station.

Research and Development of New Remote Sensing Devices

During 1974-75, the Centre continued to support projects dealing with the development of new remote sensing devices, many of which have potential applications in the North. Much of the work concentrated on the integration of sensors to the airborne data acquisition system, and on the installation of a ground reproduction and monitoring system for airborne remote sensing data. As well, research, development or testing were undertaken on a number of sensors, including the University of Toronto Institute of Aerospace Studies laser fluorosensor for use in oil spill mapping, pollution mapping, and aerial hydrography. The York University scanning photometer was test-flown over Lake Huron for the purpose of measuring chlorophyll concentration. The Communications Research Centre impulse radar for measuring ice thickness was test-flown aboard the Centre's experimental Dakota aircraft. The Centre's microwave scatterometer was tested and commissioned for the study of ice-types and water surface roughness.

The Centre has now developed hardware and software for the automated processing of airborne remote sensing data. Currently, scatterometer data, navigation data, camera firing times and data from other low rate data gathering devices can be processed. High data rate digital input channels are being added to accept digitized data from thermal scanners.

Development and Demonstration of Techniques for Using Remote Sensing Information Systems

Some 700 LANDSAT prime scenes were assembled into a mosaic of Northern Canada by the Surveys and Mapping Branch during 1974.

MAUDUSE and MICA, two software-based imagery data interpretation systems and the Image 100, a hardware-based imagery data interpretation system were developed during 1974-75. These systems have been utilized in a number of demonstration projects, including projects carried out in the North.

One such project was undertaken jointly with the Geological Survey of Canada. The objective of this project was to map surficial materials in the Pelly Bay area of the Northwest Territories using automated methods. The classes of surficial materials mapped were sand and gravel, marine silt, bedrock, glacial till, clear water, turbid

water, and unclassified material. The results of this automated remote sensing classification compared very favourably with the results of field work.

A project is currently being designed to demonstrate the applications of remote sensing to the environment of the Beaufort Sea area.

The Centre's Imagery Browse Facility, as well as the Centre's automated remote sensing bibliography RESORS were utilized extensively by explorers and researchers operating in the North. More than 10 per cent of visitors to the Centre's Browse Facility expressed specific interest in remote sensing applications to northern Canada.

Plans for 1975-76

The present level of effort in spaceborne and airborne remote sensing will continue during 1975-76. The Pouch Cove satellite tracking station should become operational and furnish timely data of the eastern Arctic and east coast offshore areas. As well, the Convair 580 should be operational and the disposal of users for airborne remote sensing projects in the Arctic and offshore areas, subject to availability of funds. Some results of remote sensing projects currently being initiated in the Beaufort Sea in conjunction with AIDJEX and Imperial Oil will likely become available during 1976.

Long-term Plans

The Centre's long term objectives in the North include the demonstration of the operational capabilities and demonstration of advantages of systems based on remote sensing for resource management and environmental monitoring. Such systems would include surficial mapping similar to the experimental Pelly Bay project, and ice reconnaissance.

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CANADA CENTRE FOR MINERAL AND ENERGY TECHNOLOGY

Mining

Review of 1974-75

Work on distribution of permafrost in the Clinton Creek Mine, Yukon Territory was completed during the 1974-75 fiscal year. Results from this work were used by consultants engaged in on-site mine planning.

At the request of the mines inspectorate, IAND, a comprehensive dust survey was done in a major northern underground mine. Some consultation was also provided on methods of measuring arsenic content of gases in a smokestack.

Research was supported towards development of a highly-mobile exploration diamond drill for use in frontier areas. A complete phototype is expected during 1974-75 fiscal year. The drill will be transportable by Beaver aircraft to the remotest areas.

Plans for 1975-76

Attempts are being made to obtain data on permafrost from a mine in Labrador for use in a handbook chapter on groundwater for general use.

Energy (Analytical Services)

Review of 1974-75

Analytical services are provided with such things as

- quality of coal and oil,
- gas analyses to maintain mining safety standards,

— application of reduction technology to iron ore deposits.

During 74-75, 28 samples of crude oil and condensate were submitted for evaluation. Work is in progress on these samples and will extend into 75-76.

Plans for 1975-76

The same analytical services should continue to be available for northern applications.

Metals and Alloys for Use in the Arctic (1974-75)

The monograph, intended to provide guidance and technical data for the design of structures, vehicles and equipment for the North, has been expanded and now covers selected ferrous, aluminum, copper, lead, magnesium, nickel, tin, titanium and zinc alloys. Data sheets giving the relevant characteristics of these alloys down to -73° (-100° F) have been up-dated and the draft has been completed.

Toughness is the strength characteristic which is most adversely affected by low temperatures, and research in progress on effects of second-phase particles in low-carbon steel is expected to provide fundamental information on the fracture toughness of high strength, low alloy steels. Associated work is directed towards the establishment of the critical parameters which control the incidence of brittle fracture.

Galvanizing of steel for structures in remote northern areas presents advantages in ease of maintenance. Certain problems can be associated with galvanizing due to temperature effects, strength levels, and processing and fabricating methods applied to the steel. These problems are under study for increasingly higher strength steels with fracture toughness adequate for low temperature service. Hydrogen embrittlement, strain, ageing and cold work are important considerations. The work to date has indicated that, although problems can occur, they can be obviated by correct selection of material, suitable welding technique and care in fabrication procedures. In many instances the galvanizing operation reduced residual stresses and hydrogen concentrations at welds. Tests in a marine environment showed no likelihood of hydrogen embrittlement problems at the intermediate strength levels. These latter tests are continuing on steels having up to 100 ksi (690 MPa) yield strength.

Atmospheric corrosion studies on three structural steels have continued at the test site established in 1973 close to the ocean at Tuktoyaktuk. After an exposure of one year, corrosion rates were found to be appreciably higher than had been expected. A short-term test in Arctic sea-water near Ellesmere Island, however showed low corrosion rates. Preparations for a longer-term test are underway.

Transportation difficulties in the North tend to favour the use of high strength and high density alloys, the higher cost of which is offset by the weight reduction. Studies of the behaviour of selected alloys in a simulated marine environment were continued. Hy-130 steel is being tested to determine its resistance to environmental cracking and corrosion fatigue. Results obtained to date indicate that it is suitable for advanced marine vessels or structures. Several grades of two titanium alloys (Ti 6-4 and Ti6211) are being tested for their resistance to environmental cracking under various electrochemical conditions.

The first stage of a comparison of the notch ductility of welds made by various processes in an extensively used Canadian structural steel has been completed. The data developed will assist in ensuring the integrity of steel weldments subjected to low temperatures in northern Canada. An extensive program of explosion-bulge testing has also been carried out and the results been analysed.

The performance of welded specimens of three high strength steels when deformed explosively at low temperatures, was noted. A copper-nickel steel developed at Physical Metallurgical Research Laboratories compared favourably with one of the commercially-available steels and was superior to the other commercial steel under similar test conditions.

Metals and Alloys for Fuel Transmission Pipelines

The objective of this project is to ensure the structural integrity of oil and gas pipelines in the North in order to minimize geological damage and to maintain operational efficiency. The first approach involves the assessment of pipe of Canadian and foreign manufacture, and the second, the development of a weldable line-pipe steel of improved strength and toughness.

Nine sample of line-pipe up to 48 in. (1.22m) diameter, 1.25 in. (31.7 mm) wall thickness and 40 ft. (12.2m) long, fabricated

by various processes, have been examined. Three of the samples were manufactured to conform to the tentative specifications for the Mackenzie Valley Pipeline, and may definitely be categorized as candidate pipe. The evaluation procedure includes non-destructive inspection and the investigation of residual stresses, the level and uniformity of the mechanical properties, the micro-structure, the seam weld and field weldability, the fracture toughness, the fatigue strength and environmental cracking resistance. A study of failure initiation in medium-size pipe with simulated service damage is also in progress under cyclic pressurization at low temperatures. The emphasis throughout is on the problem areas associated with the northern environment.

The toughness characteristics of the seam welds in the three candidate pipes were significantly better than those of the earlier pipes, and would satisfy the arctic requirements. The weldability of all the pipe-line steels was good, that of the micro-alloy types showing some superiority and that of the quenched and tempered steel being the poorest.

Environmental cracking susceptibility was studied under static and cyclic loading. All line-pipe steels have shown some incidence of cracking when tested as U-bent strips containing the weld in an actified H₂S-bearing solution. The fatigue tests confirmed the existence of a distinct pattern in the functional dependence of crack growth rate on the stress intensity range and the cyclic frequency.

Basic work is continuing in an attempt to replace the empiricism of present correlation tests for toughness by more direct and potentially quantitative physical concepts. Dynamic toughness measurement on bend specimens instrumented with strain gauges have been completed for four line-pipe type steels of various thicknesses and encouraging results have been obtained.

Further tests in the improved-steel development program, aimed at meeting the requirements of the next generation of northern pipelines, have confirmed that adequate toughness can be obtained in a low carbon-manganese-niobium steel at the 80 ksi (552 MPa) strength level for plate controlled-rolled to 1/2 in. (12.7 mm) thickness and water-spray quenched. Additional alloying will be necessary to improve the ageing response. A supplementary study of plate-processing parameters has shown that it should be possible to accelerate the

processing of line-pipe steels into plate with little or no deterioration in properties.

A service failure in a Yukon pipeline was investigated for the National Energy Board. Conclusions were drawn about the cause for failure in terms of external damage, and this had some implications for the integrity of the pipeline as a whole.

Plans for 1975-76

The collection of corrosion data for selected structural alloys in the atmosphere and in sea-water will continue at various locations in the Arctic. Studies in progress on the line-pipe project will proceed along the lines indicated above with the addition of three samples of quenched and tempered candidate pipe to the evaluation program.

A research project is planned to study the effect of welding variables and consumables upon the notch ductility of welds in weathering steel, with various methods of assessment being employed. This research has special significance for the low-temperature performance of bridges and other structures fabricated in these materials for use in the North.

POLAR CONTINENTAL SHELF PROJECT

Responsibilities

To do a long-term study of the continental shelf lying north of the mainland of Canada and north and west of the Canadian Arctic Archipelago, including the sea floor, the earth's crust, the mantle beneath it, and the waters above it; together with the islands of the archipelago, the straits and sounds between the islands and, where relevant, the adjacent mainland.

The study covers mainly those fields of survey and research for which the Department of Energy, Mines and Resources is responsible in other parts of Canada, wherever such a study is not more economically and efficiently pursued as a separate self-contained operation. It is also designed to include or to support worthwhile research in fields outside those normally covered by the Department if such research is in the national interest and could not otherwise be done.

An important function of the PCSP is to co-ordinate and arrange for mutual or concerted action by various agencies whose diverse specialties or capabilities can be brought to bear on different but related aspects of a major Arctic problem or critical area of study; and to provide continuity of

planning and operation for various studies which are short term and focused on individual problems.

Emphasis is placed on field research and survey, but basic laboratory or theoretical research is carried out as needed to aid in the investigations, or in the interpretation of field data; and equipment or technique development or experimentation is undertaken when relevant. In addition, the field activities of the project are made available, under certain conditions, to approved universities and other non-government research groups.

Review of the 1974-75

Field work was carried out from mid-February to mid-October, being coordinated from Tuktoyaktuk in the Mackenzie Delta and from Resolute on Cornwallis Island.

The Beaufort Sea Project environmental studies taxed the capacity of TUK base camp on several occasions when unfavourable ice conditions in the Beaufort Sea kept scientific parties on shore. The 32 projects under the Beaufort Sea umbrella were all supported through the facilities at TUK and were over and above the normal PCSP program. Again, the major field program efforts were concentrated in the hydrographic survey of Eureka Sound and adjacent fiords and the gravity survey of southern and eastern Amundsen Gulf. Permafrost studies also received considerable support again both in the Beaufort Sea and Resolute areas. The biological sciences were very well supported in 1974. The Northwater Project, to study the polynia of northern Baffin Bay was well supported by Canadian government agencies. A total of 73 diverse projects were supported by the Polar Continental Shelf Project in 1974; the Beaufort Sea Project is additional to this regular program.

In addition to the Department of Energy, Mines and Resources, the following agencies were involved in, or received assistance from, the 1974 program of the Polar Continental Shelf Project:

Arctic Institute of North America
Department of Indian Affairs and Northern Development
Department of Defence, D.R.E.P. and D.R.E.O.
Environment Canada, Environmental Management
Environment Canada, Fisheries and Marine Service

Environment Canada, Canada Wildlife Service
Environment Canada, Lands, Forests and Wildlife
Environment Canada, Inland Waters Directorate
Environment Canada, Marine Science Directorate
Environment Canada, Canada, Water Management
Institute of Low Temperature Science, Japan
McMaster University, Ontario McGill University, Quebec
Memorial University of Newfoundland
National Museums of Canada
Quebec Wildlife Service
Scott Polar Research Institute
Swiss Federal Institute of Technology
University of Alberta
University of British Columbia
University of Ottawa, Ontario
University of Toronto, Ontario
University of Uppsala, Sweden
University of Washington, U.S.A.
Michigan State University, U.S.A.
University of Liège, Belgium
Brock University, Ontario
Hokkaido University, Japan
Laurentian University, Ontario
Carleton University, Ontario

The following is a summary of work conducted during 1974 by the Polar Continental Shelf Project or to which the Project contributed support. In several cases, as noted, the Project provided logistic or field support to studies of other agencies; these studies will be described in detail in those reports submitted by the various agencies responsible for their scientific direction.

Archaeology: Devon and Ellesmere Islands

Investigator: R. McGhee, Memorial University, Newfoundland

Field work was directed at clarifying the picture of episodic occupation in the high Arctic and to discern whether the Port Refuge sequence is typical of the cultural history of the entire region. Surveys were undertaken to build comparative culture sequences. Results indicate that the Port Refuge area is singularly and uniquely rich in archaeological material. The 1974 survey areas contained negligible evidence of human occupation except at Porden Point, Cape Storm and Cardigan Strait. These areas closely parallel the periods of occupation at Port Refuge.

Biology: Aquatic ecosystems

Investigator: D.M. Rosenberg and N.B. Snow, Environment Canada, Fisheries and Marine

Timber harvesting, forest fires, road construction and operation, and channelization of rivers and streams were identified as the major sources of unnatural increases in suspended and settled sediments in northern watersheds. Recovery rates of flowing water from increased sedimentation vary from a few days to never and depend on characteristics of the river, the severity of sediment addition and availability of undamaged areas as sources of recolonization. A flowing-water habitat is able to carry away an increased sediment load to prevent permanent sedimentation of the substrate. Future research needs standardization of measurements and methods, quantification of terms and laboratory experimentation. Benthic invertebrate populations tend to be typical of areas disturbed by sedimentation. To this end, the drift responses of invertebrates were studied and river invertebrates were categorized.

Biology: Arctic whales, Beaufort Sea and Lancaster Sound

Investigator: D.E. Sergeant, Environment Canada, Fisheries and Marine

Aerial surveys and ERTS satellite photo extended the knowledge of penetration of white whales into the eastern Beaufort Sea in relation to the progressive summer opening of leads in the pack ice. Behaviour patterns were also studied at Lancaster Sound from a tower onshore at the mouth of Cunningham Inlet, northern Somerset Island. There were over 1,000 whales in early August. Births were not seen, but newborn calves were numerous. Narwhals were studied at Pond Inlet in mid August and censuses were taken in Admiralty Inlet and Eclipse Sound. Specimens from an Inuit fishery in Navy Board Inlet were collected.

Biology: Physiology of soil bacteria, Devon Island

Investigator: L. Nelson, Arctic Institute of North America

Work on Arctic soil microbial populations has concentrated on biomass estimation, species composition and physiological groupings. The most stressful period on microbes is the transition from winter to summer, which in the Arctic is accelerated by 24 hour daylight. Laboratory studies

th meadow soil from Devon Island shows indigenous population to be sensitive to freeze-thaw effects. Although no significant change in total numbers could be demonstrated after the thaw, when separated into hummock and trough the numbers in the hummock decreased immediately after thaw while numbers in troughs remained constant. Bacterial counts on the whole were higher than has been found in tundra soil. The predominance of Gram-negative species is unusual in tundra soils and may be attributed to the high moisture content in a hummocky sedge-meadow cross, which creates an essentially aquatic environment.

Biology: Ornithology, greater snow goose, Eastern Arctic

Investigator: J.D. Heyland, Quebec Wildlife Service

Three projects were undertaken in 1974. The first supported a study to determine if IRS-1 and other satellite imagery can be used to predict annual production of Arctic nesting geese. The second project was to recapture geese banded in preceding years on northern Baffin Island and Bylot Island to determine the fidelity of these birds to their nesting and moulting areas and to band geese at the fringes of the presently known range. The third program was to vertically photograph concentrations of Beluga in the Northwest Passage and adjacent waters. PCSP gave complete air and logistical support.

Biology: Vertebrate ethology and animal community study, Bathurst Island

Investigator: S.D. MacDonald National Museum of Natural Science

Research at Bathurst Island continues in order to gain information on specific interrelationships, population, fluctuations, and effects of weather and climate in relation to behaviour, social organization and breeding success. Many projects are continuations of those established in 1968 and tend to become more elaborate over a period of years. Continuous records of phenological events are maintained and station weather data are submitted to the Atmospheric Environment Services. Continuing studies emphasize Arctic animals in their undisturbed natural environment. Studies include: the behaviour and ecology of the bray gull; a breeding bird census and banding program; the behaviour and ecology of musk oxen; the life history and ecology

of varying lemming; meteorology and micro-climatology; investigations of food preferences of musk oxen, Peary caribou and arctic hare; pond invertebrates; ecological studies of bryophytes, soil reconnaissance and pedologic investigations; and studies of free-living and parasitic mites. The research area is being proposed as a wildlife preserve by the Tundra Panel of the International Biological Program.

Biology: Zoology, animal habitats

Investigator: D.C. Thomas, Environment Canada, Canadian Wildlife Service

The use of multi-scale aerial photography in mapping and evaluating animal habitats in the Arctic was continued. Habitat studies on eastern Melville Island were conducted to determine the most efficient methods of sampling vegetation, and to estimate cover, above-ground standing crops and productivity of forage species. Information was obtained on floristic composition, topography, geomorphology and an index of past use of the habitat by caribou and musk oxen. Reproduction and productivity of Arctic Island caribou was investigated through a sample of 25 caribou. Caribou on Bathurst, Byam Martin and Eastern Melville Islands were in poor condition and foraging on some of the most poorly vegetated habitats. Only one of 14 adult females was pregnant, an alarming statistic. Five animals taken from Prince of Wales Island were in better condition, and two of the four younger females were pregnant.

Biology: Zoology, bluenose caribou, Western Arctic

Investigator: V.D. Hawley, Environment Canada, Canadian Wildlife Service

The herd located between the Coppermine and Mackenzie Rivers from Great Bear Lake to the Arctic Ocean has been poorly studied in comparison to the other major herds in the Territories. The formation of management plans and procedures based on adequate facts necessitate the compilation of quantitative data on the biology and ecology of the herd to determine the size, composition seasonal distribution and movements of the herd. Productivity, mortality, survival, and population trends were studied as well as the interrelationship between that herd and barren ground caribou on the mainland adjacent to their range, caribou on the nearest Arctic Islands, reindeer on and off the reindeer grazing reserve and woodland

caribou on or near the breeding and wintering range of the bluenose herd. By an aerial census, the herd was estimated at 89,000. At the same time musk oxen were counted and preliminary estimates indicate approximately 5,000 in the area.

Biology: Zoology, grizzly bear research, Richards Island and Tuktoyaktuk Peninsula

Investigator: A.M. Pearson, Environment Canada, Canadian Wildlife Service

Ecological studies of the arctic coast grizzly bear commenced in 1974 with 43 different animals being identified. Grizzlies were found in all habitat types but were more common in the areas of greater physical relief. Individual grizzlies ranged over much greater areas than has been found in other grizzly populations. Thirty dens were discovered and several were known to have been active during the winter of 1973-74. Eleven grizzlies with radio collars were tracked to dens being used in 1974-75. PCSP provided aircraft support.

Biology: Zoology, Peary caribou and musk oxen, Western Queen Elizabeth Islands

Investigator: F.L. Miller, Environment Canada, Canadian Wildlife Service

Aerial surveys indicate that numbers of Peary caribou have declined drastically throughout the survey area. Numbers of musk oxen had increased from 1961 to 1973, but they too have decreased markedly since 1973. Quantitative analyses and overall evaluation of survey results are being performed.

Biology: Zoology, polar bear population dynamics

Investigator: I. Stirling, Environment Canada, Canadian Wildlife Service

To date, 298 bears have been tagged and 35 recoveries have been made. Seven bears tagged in Alaska have been recovered in Canada. Seal population, productivity and distribution studies as they relate to and affect polar bear distribution and abundance continue. Behavioral studies on Devon Island were most productive.

Biology: Zoology, polar bear research

Investigator: C. Jonkel, Environment Canada, Canadian Wildlife Service

Data indicate a large population of bears near the eastern end of Barrow Strait between Somerset and Devon Islands. Few

bears were sighted on Devon Island or in the Maxwell Bay area in the spring of 1974 probably because of considerable open water dispersal of seals. In Jones Sound, figures indicate an over-harvest. Bears in Norwegian Bay region have pronounced annual movements. Beyond Haig Thomas and King Christian Islands the density falls to zero. In response to the proposed High Arctic Pipeline, studies commenced on Baffin Island where hunters believe higher quotas are justified. Bear density, seal density and floe edge data were recorded. Denning and productivity studies were initiated on Prince of Wales and Bathurst Islands again in response to the proposed High Arctic Pipeline Project. Maternity denning occurs on SW Bathurst Island, and NW Prince of Wales Island. In addition, physiological, chemical and skeletal studies have been performed and tooth sectioning, tooth anomalies and toxic chemical studies are in progress. Air transportation and research is supported by PCSP.

Biology: Zoology, ringed seals, Western Arctic

Investigator: T.G. Smith, Environment Canada, Fisheries and Marine

Activities commenced at Holman Island, Western Victoria Island to study the predation of ringed seal pups by arctic foxes and polar bears and to determine their breeding habitat and production. Low snow cover on the Amundsen Gulf reduced available birth lairs and reduced pup population. A peak fox population resulted in virtual total kill. A new method has been developed to capture seals at breathing holes. Ninety-six seals were captured at Brown's Harbour, Cape Parry to determine the effects of crude oil on ringed seals.

Climatology: Meteorology

Investigator: B. Taylor, Contractor to Polar Continental Shelf Project, EMR

Twice daily transmission of aviation weather reports were made from Resolute to the Edmonton Arctic Weather Control from over 50 field stations during the 1974 season. This contributed to a more efficient high Arctic surface weather network. The data are preserved on computer cards for use in PCSP climate and Sea Ice studies and for other interested parties.

Climatology: North water project

Investigator: F. Müller, McGill University

During 1974, the stations on Cobourg Island, Carey Island and Cape Herschel continued recording climatological observations every six hours, continuous measurement of radiation, maintenance of four automatic weather stations, sampling of air humidity for isotope analysis every 24 hours and weekly observations of sea ice. New projects included an "in house" remote sensing program, a program of snow stratigraphy combined with isotopic sampling and repetition and augmentation of sea ice dynamics. The next major phase will be analysis of data compiled over two years. PCSP provides logistical support through equipment and aircraft.

Ecology: Oil in aquatic systems

Investigator: N.B. Snow *et al.*, Environment Canada, Fisheries and Marine

The effects of an experimental crude oil spill in a Mackenzie Delta flood plain and lakes were monitored for 15 months. Seven papers on the subject matter have been written in relation to proposed pipeline and highway developments in the Mackenzie Porcupine drainages.

Geodesy: Arctic Doppler '74

Investigator: L.R. Colwell, Geodetic Survey of Canada, EMR

During the spring and summer of 1974, a Doppler Satellite Positioning Project was carried out throughout the Arctic Islands, Greenland, Quebec, Newfoundland and Cape Breton Island. Eight receivers were used simultaneously. The objectives were to establish high-precision geographical positions at stations throughout the Arctic Islands, Greenland and the northern Arctic coast and to provide second-order position ties from the Doppler stations to the existing traverse networks as well as establishing second order Laplace azimuths, gyro-theodolite azimuths and to provide heights at all stations to highest feasible accuracy by spirit-levelling, vertical angulation or altimeter traversing. Co-operation from the Danish Geodetic Institute allowed the Greenland - Canada tie to be initiated. The Canadian contingent of 35 men used one helicopter and two Otters with support from the PCSP as well as numerous casual charters.

Geology: Coastal sedimentation, Yukon Beaufort Sea Coast

Investigators: C.P. Lewis, D.L. Forbes, Geological Survey of Canada, EMR

Field work in 1974 represented the third year of investigations into the geometry, composition, origin and stability of coastal landforms bordering the Beaufort Sea. The objective was to examine the geological aspects of coastal susceptibility to oil spills; to identify and determine susceptibility to inundation by sea water; determination of sediments and vegetation and examination of sediment erosion, transportation and deposition.

Coastal plain rivers have gravel beds but this gravel does not reach the lower delta plains where sediments are primarily organic-rich silts and sands. Cliff retreat up to 90 m in 16-18 years has occurred resulting in the movement of sediment along shore leading to hundreds of metres of spit and barrier extension. Significant sediment transport events are associated with spring breakup. Rapid coastal retreat, shallow water depths and low temperatures have enabled the preservation or formation of permanently frozen ground beneath estuary and nearshore areas. West of TUK the sediments are mixed gravels and sands and east of TUK pure sand is found.

Geology: Coastal sedimentation, SE Melville and Western Byam Martin Islands

Investigator: P. McLaren, Geological Survey of Canada, EMR

A series of 19 profiles were surveyed and a frost table profile was prepared. Sediment in both profiles and zonals were sampled extensively. Other work included periodic photography of the coast, a qualitative and quantitative study of factors affecting the frost table, a map of the areas of maximum ice push, a detailed study of a raised delta, tide ranges and the effects of ice on the tide ice conditions in Byam Martin Channel and many observations of the coastal geomorphology. Under-ice diving observations in the coastal environments of the islands were undertaken. Formerly established profiles and zonals were examined and nearshore environments were observed. The sea floor and/or ice was studied at 25 different locations. These studies were supported with PCSP aircraft logistics.

Geology: Permafrost drilling, Banks Island, Ellesmere Island and Boothia Peninsula
Investigator: J.J. Veillette, Geological Survey of Canada, EMR

Shallow permafrost coring was conducted to test a new helicopter portable drill which can handle both diamond drilling coring bits and augering tools, allowing recovery of undisturbed core samples in varied subsurface conditions. This drill is well suited to mineral exploration to 1,000 ft. and to high Arctic conditions and areas. Helicopter support was provided by PCSP.

Geology: Quarterly sedimentology and geomorphology, Banks Island

Investigator: T.J. Day, Geological Survey of Canada, EMR

This project is concerned with the intensity and distribution of fluvial coastal and slope processes on Banks Island, and is designed to provide an extensive array of basic geomorphic and hydraulic data relevant to possible future developments.

Field work began in the Bernard River Estem and fluvial sediment studies were also undertaken along the Kellet and Masik Rivers near Sachs Harbour. Aerial surveys and photography indicated that the western coasts are more active whereas slope studies and preliminary surveys show that thermokarst features are extensive along the northern and southern coasts. Helicopter and fixed wing support was provided by PCSP.

Geology: Geomorphology, Alaska and Northern Canada

Investigator: S. Kinoshita, Institute of Low Temperature Science, Japan

Seven scientists investigated the role of the active layer on vegetation and soil invertebrates in permafrost areas. The forest zones studied were Fairbanks, Inuvik and Churchill; the tundra zones were Barrow and Tuktoyaktuk. Drilling programs were carried out and core samples were taken for analysis of their layer structures, soil types, soil colours, densities and pH's. The samples were dried and water content, density and size distribution of the soil particles was measured. Sod samples were taken from various habitats and soil invertebrates were isolated and studied. Ice samples were collected from the ice cellar at TUK so that crystal structure might be analysed under polarized light.

Geology: Geomorphology, Banks Island

Investigator: H.M. French, Geological Survey of Canada, EMR

Field work centred around the study of ground ice conditions and terrain disturbance in the vicinity of Sachs Harbour Village and investigation of pingo-like mounds which occur in the lowlands of many of the major river valleys of the island. Based upon observations made during previous field work, various closed system pingoes or pingo-like remnants were identified. Thirty to 40 isolated mounds occurred in sandy outwash plains and melt-water channels of east-central Banks Island. Concentrations exist in the upper reaches of the Thomas River and in the interior lowlands currently drained by the Bernard and Big rivers. In other areas collapsed pingoes and relic pingo fields were observed.

Studies in 1974 with respect to gully erosion included the study of ice-wedge patterns, sediments and ground-ice conditions and the measurement of thermal differences between disturbed and undisturbed terrain. Logistical support was provided by PCSP.

Geology: Geomorphology, Banks Island

Investigator: A. Pissart, University of Liège, Belgium

Periglacial research was carried out with respect to pingoes, wind action and structures in relation with patterned ground. Pingoes were located on the terraces of Thomsen River and Able Creek and 70 km southwest of Johnson Point. Wind deposits were studied and it is clear that the wind is now reworking old wind-blown sand deposits. Some well developed ventifacts were observed in the Thomsen River area.

Geology: Geomorphology, Mackenzie Valley, Arctic Coast

Investigator: J.R. MacKay, University of British Columbia

Field studies were continued in the Garry Island, Pelly Island, Richards Island, Tuktoyaktuk Peninsula, and Paulatuk areas. Relic ice wedges were studied at Pelly Island. Lake bottom heave and ice segregation were monitored at four sites. The rate of growth of permafrost on two lakes which drained in 1972 and 1974 are under initial study. Two mounds were discovered to have formed, on the sides of pingoes, from sub-permafrost ground water. Ice petrefabric work and a

morphological study of tundra polygons was conducted in the Tukoyaktuk area.

Geology: Geomorphology, marine geology and coast sedimentation, North Somerset Island and coasts of Barrow Strait

Investigator: R.B. Taylor and C.F.M. Lewis, Geological Survey of Canada, EMR

A study of seasonal beach profile change and nearshore characteristics and processes was continued. Along with research on the active beach was an estuarine study of Cunningham Inlet and a collection of geomorphic information and organic samples from the raised beaches for radio-carbon determination. Geological and hydrographic research were completed both within Cunningham Inlet and the waters immediately offshore as well as a study of coastal features and processes on S.E. Bathurst Island and Lowther Island. Fixed wing aircraft support was provided by PCSP.

Geology: Geomorphology, Surficial, Central Ellesmere Island

Investigators: D.A. Hodgson, S.A. Edlund, Geological Survey of Canada, EMR

Field work on southwest Ellesmere Island and Graham Island was continued plus observations on vegetation. Because vegetation and surficial materials are closely related, integrated mapping is of mutual value, and can lead to a combined presentation of the two most important factors in land use management. Examination of the surface characteristics and associated plant communities of the weathered mantle of some 30 bedrock formations was performed as well as areas of preglacial gravels, glacial moraine and postglacial marine deposits. Activities were moved to Eureka to examine disturbed sites and to core with a prototype JKS 300 drill/auger. Fixed wing support was provided by PCSP.

Geology: Stratigraphy, Banks Island

Investigator: A.D. Miall, Geological Survey of Canada, EMR

The objective was to study the stratigraphy and sedimentology of all pre-quaternary rocks exposed on Banks Island. Air and logistical support was given by PCSP.

Geology: Stratigraphy, Peel Sound formation, Somerset Island

Investigator: B. Rust and M.R. Gibling, University of Ottawa

The second field season has produced detailed stratigraphic logs and rock collections for all major sections of the formation. The successions include a wide range of lithologies, with limestones, dolostones and evaporites below grading into sandstone, and conglomerates above. These successions are being investigated in terms of petrography, faunas, and trace element distribution. Unfossiliferous limestone bands in the red-bed sequence show trace element concentrations characteristic of marine limestones, suggesting periodic marine incursions. Field mapping of stratigraphic units across Somerset Island suggests that conglomerate and sandstone spread diachronously eastward as the Boothia Arch was uplifted in upper Silurian/Lower Devonian time. PCPS provided logistical support.

Geology: Surficial, Banks Island

Investigator: J.S. Vincent, C.M. Tucker and S.A. Edlund, Geological Survey of Canada, EMR

Recent oil and gas exploration on Banks Island has created a need for detailed information on the unconsolidated deposits, landforms, permafrost, ground ice, organic cover and the geomorphic processes responsible for terrain modification. Field work concentrated on gathering quantitative data at critical sites, identifying and obtaining general information on the various unconsolidated lithological and stratigraphic units, identifying and describing the various processes acting on the lithographic units, attempting to understand the recent geological history of the island and obtaining information on the vegetative cover of specific landforms and formations. Aircraft support was provided by PCPS.

Geology: Terrain sensitivity, New Townsite, Resolute

Investigator: C.L. Rosenfeld, Brock University

The area at the base of Signal Mountain is favoured as the new Townsite for Resolute. When the construction grid was established in 1974, geomorphologists surveyed the Signal Mountain site to locate, identify and map the micro-features of the area related to its periglacial geomorphology. The initial survey data was used to plan 'open space' within the community, avoiding concentrated activity in areas of sensitive terrain.

Geophysics: Geothermal measurements

Investigator: A.S. Judge, Earth Physics Branch, EMR

During 1974, PCSP provided all logistic support for downhole temperature profiles measured in 21 wells in the Arctic Islands, each of which has been preserved as permafrost observation wells. Measurements at each site are repeated at yearly intervals to examine the post-drilling freezeback and to extrapolate to undisturbed thermal conditions. Six new sites were logged in 1974. One new site was Gulf *et al* Neil 0.15 at 80° 45'N and 83° 05'W. The determination of permafrost thickness at this location is believed to be the most northerly in the world. A drilling program investigated the occurrence of permafrost beneath the sea-floor of Kugmallit Bay.

Geophysics: Gravity control network

Investigator: P.J. Winter, Earth Physics Branch, EMR

The National Gravity Net was updated and monumented in 1974 to provide an improved gravity reference standard for the exploration industry. New stations were established at oil company campsites. Revised gravity values and base station descriptions are now available. PCSP provided air and logistic support.

Geophysics: Gravity, Amundsen Gulf

Investigator: D.B. Hearty, Earth Physics Branch, EMR

The purpose of the survey was to complete the systematic regional coverage of Amundsen Gulf and provide check points for surface meter work especially in ship turnaround areas along the coast. During the survey, evaluation tests were made with the recently acquired Inter Ocean Sounders. Two Lacoste and Romberg gravimeters were used for the gravity measurements. The Decca Lambda Chain was used for navigation. PCSP provided all logistical and air support for this program.

Geophysics: Palaeomagnetism, Somerset Island

Investigator: W.F. Fahrig, Geological Survey of Canada, EMR

Oriented samples were collected for palaeomagnetic study at 33 sites including the east coast of Prince of Wales Island, the Hunting River area of Somerset Island and from a small Kimberlite diatreme in south

central Somerset. The dykes of the Hunting River area are stably magnetized with a direction almost reversed to that of the Prince of Wales sills and kimberlite specimens are stably magnetized and indicate a very young age of intrusion, late mesozoic tertiary. PCSP provided aircraft support.

Geophysics: Portable satellite receiving station

Investigator: S. Washkurak, Geological Survey of Canada, EMR

A National Ocean Atmospheric Administration (NOAA) very high resolution radiometer (VHRR) satellite receiving capability was established at TUK. A computer controlled parabolic antenna is able to receive data when transmitted from the satellite in the non-multiplexed real time mode providing coverage from Baffin Island to Florida. Manual tracking of the satellite also possible. This project was completely supported by PCSP.

Geophysics: Seismology, seismic refraction Sverdrup Basin

Investigator: G.D. Hobson, PCSP, A. Overton, Geological Survey of Canada, EMR

Seismic refraction data defining thickness and regional structure of sediments within the Sverdrup Basin were obtained on a 21 km profile extending from Isachsen Peninsula on the northeast of Ellef Ringnes Island to the Sun *et al* Linckens Island P-4 Borehole southwest of Amund Ringnes Island. Gravity data were also obtained at 1.46 km intervals along the profile. Reverse profile techniques are being developed to study smaller scale structures and velocity functions along the profile. This project was supported substantially by PCSP, by the Earth Physics Branch, and by the Inland Waters Branch, DOE.

Geophysics: Seismology, seismic studies of permafrost

Investigator: J.A. Hunter, Geological Survey of Canada, EMR

The study of seismic properties of permafrost materials continued with five seismic crews operating in several areas of the Arctic. Land survey sites were located at Tuktoyaktuk, Kay Point, Yukon, Banks Island, Noice Peninsula, Ellesmere Island and Spence Bay, Boothia Peninsula. Marine techniques designed to map the occurrence of permafrost were carried out at Herschel

land, Kay Point, and Pullen Island in the Eaufort Sea, at selected sites off the south-east coast of Melville Island, and at Cunningham Inlet, Somerset Island. Logistic and aircraft support were provided by PCSP.

Geophysics: ULF Mapping

Investigator: W.J. Scott, Geological Survey of Canada, EMR

A drilling program was conducted at the isolated Hill test site east of Nutik (Nutiknuk). Results of the radar sounding experiment were encouraging. DC resistivity soundings were made through the ice during April indicating the presence of underlying thaw zones of considerable depth. During July and August, further DC and VLF resistivity profiling was carried out to the Nutiknuk grid as well as seismic refraction measurements. A trial survey using DC and VLF resistivity and seismic refraction profiles was performed across the Melville River, just up stream from its mouth. PCSP provided logistical support.

Glacier Physics: Devon, Axel Heiberg and Ellesmere Island Ice Caps.

Investigators: R.M. Koerner, PCSP

Snow and ice samples were collected for every 100 m change of elevation for O^{18} , electrolytic conductivity, water equivalent and ice density determinations. Atop each ice cap, a core was taken to uncover the 1962 summer-melt layer and the 1963-64 bomb layer horizon. Cores were measured and weighed for density and water equivalent to determine the accumulation rate over the past 12 years. At two core sites a continuous sequence of annual layers was traced between the surface and the 1962 summer surface. At each site, samples were collected for snow chemistry, particulate analysis and pollen studies.

Glaciology: Climatology, Axel Heiberg Island

Investigator: F. Muller, Swiss Federal Institute of Technology, McGill University

In 1974, the mass balance of White and Byrd Glaciers was measured, the stake network maintained and various stakes as well as the glacier snout positions re-surveyed. A study of the thermal regime of the White Glacier was commenced with a new drilling program using an open system hot water drill for the first time in the High Arctic. PCSP provided aircraft support.

Glaciology: Photogrammetry and aerial photography

Investigator: K.C. Arnold, Environment Canada, I.W.D.

Aerial photography included pipelines routes, ice-jamming sites on Mackenzie River, scientific research sites, highway, ferry and pipeline crossing sites, potential wharf and docking sites and numerous settlements. Midsummer photography covered parts of Ellesmere and Seymour Islands and late summer photography covered selected glaciers around north Bathurst, North Kent, Devon Ellesmere and Axel Heiberg Islands. To assess exposure quality, selected historic sites, settlements, varied terrain and wildlife were photographed. PCSP supplied total aircraft support.

Hydrography: Arctic surveys, Eureka Sound

Investigator — J.H. Wilson, Environment Canada, Water Management

Eureka Sound and adjacent fiords were sounded. 4,189 soundings were taken and were positioned over most of the area by Motorola R.P.S. Photo-fixed time lines were used for positioning in small fiords and bays. New horizontal control was established to supplement the existing topographic control. All helicopter and fixed wing support and logistics were provided by PCSP.

Hydrology: Drainage basin studies, Mackenzie River Basin, NWT.

Investigator: D.R. MacKay, Environment Canada, Environment Management

Instruments to measure precipitation and runoff were operating at Boot Creek and Peter Lake Basins from late May through early September. Continuous records of precipitation, water level, air temperature and humidity were obtained at Twisty Creek in July and August. Helicopter support was provided by PCSP.

Hydrology: Devon Island

Investigator: B.E. Ryden, University of Uppsala, Sweden

Field work at Truelove Inlet concerned observations and recordings of the main water budget variables related to meteorological records. Snow course measurements and studies of physical properties of melting snow were made. Soil types were sampled to measure water holding capacities and range of moisture content. Permanently channelized run-off was continuously recorded, special infiltration studies were performed

and the transport of litter by surface run-off was measured. Meteorological stations were operated at the base camp. PCSP provided logistic support.

Hydrology: South Central Ellesmere Island

Investigator: S.B. McCann, McMaster University

A second full summer season of observations were made from a base camp at the head of Vendom Fiord. Research has been directed to document and model the hydrologic regime of the two large rivers which join to flow into the head of the fiord and to examine the sediment transport rates and flood plan, stream channel and sandur characteristics. A large proportion of the discharge of the two rivers is derived from the Ellesmere Ice cap to the east, where part of the marginal drainage system is complicated by a series of ice dammed lakes, which released large quantities of water in August in both 1973 and 1974. The second concern has been the investigation of the hydrologic properties of the active layer: This has involved a detailed examination within a restricted area of the spatial and temporal variations in active layer drainage. Aircraft support has been through PCSP.

Sea Ice: Area surveys, Arctic Archipelago and Arctic Ocean

Investigator: D.G. Lindsay, Contractor to Polar Continental Shelf Project, EMR

The systematic airborne sea ice reconnaissance surveys conducted by PCSP from April to October 1974 marked the fourteenth consecutive year for this program. Observations were made in the channels of the Arctic Archipelago between Alert and Tuktoyaktuk eight times during the season. The majority of the surveys were concentrated in Parry Channel and the Queen Elizabeth Islands. Good weather allowed favourable coverage and progress. Break-up was later than usual and resulted in a smaller break-up and a smaller amount of open water. Ice cover in the northern channels remained unbroken at the end of the season, however, the patterns of break-up were normal.

Sea Ice: Dynamics of first year ice

Investigator: P.F. Cooper, Jr., Polar Continental Shelf Project, EMR

Two strain gauges were set up approximately two miles apart, 27 miles NNW of Tuktoyaktuk. In qualitative agreement with

measurements made by laser interferometer on an ice island north of Alaska, these showed the expected elastic changes but also indicated that methods used were too crude to make comparative or long-term measurements sensible. More accurate equipment was acquired and set up southeast of Herschel Island.

Sea Ice: Arctic ice dynamics joint experiment (AIDJEX)

Investigators: P. Martin, A. Thorndike, University of Washington,

AIDJEX was notified by PCSP in April 1974 that a large ice island was located about 160 km north of the Mackenzie River delta. An extensive search in early June to re-establish the position of the ice island revealed it to be 50 km from the previous position. It was measured at seven km long by three km wide. Aerial photographs indicated that the island was free from active fractures and was in no danger of break-up. Several visits were made to the island to deploy instrumentation and to investigate the island's origin. The morphology is such that it would be suitable for a research station.

Toponymy: Kutchin Athapaskan Bands, Yukon and Northwest Territories.

Investigator: J.T. Ritter, University of Alaska

The project purpose is to exhaustively record the geographical nomenclature of this area. Initially, the Peel River was traced from its confluence with the Mackenzie to as far south as Mount Deception on the Wind River. Approximately 700 Kutchin place-names have been recorded accurately within the quadrant of Old Crow, YT lower Anderson River, Dawson City, YT and the upper Arctic Red River. The denser areas reflect land occupancy patterns. The importance of this work is reflected in the many map corrections, revisions, and additions which are being made as a direct result of this project.

Support was also provided for:

a biogeochemical study of the movement of heavy metals in a tundra area,

a study of the feeding habits of musk oxen and Peary caribou on Melville and Axel Heiberg Islands,

oceanographic and marine ecology studies in the Eskimo Lakes and Beaufort Sea,

a fifth and final summer to complete the Devon Island High Arctic ecosystem study (I.B.P.)

a gill-netting and seining program for small salt water fish along the coast of Tuktoyaktuk Peninsula,

a study of the effects of crude oil spills on tundra ecosystems (A.L.U.R. program), investigations of tension-crack ice and icing-mound ice on the Tuktoyaktuk coast, marine geological/geophysical studies in Baffin Bay and adjacent continental margins, field studies of early Palaeozoic rocks on Somerset Island,

radio-echo measurements on the Devon Island ice cap,

monitoring atmospheric corrosion tests on structural steels,

Plans for 1975-76

The Beaufort Sea Study Program will continue to operate through Tukoyaktuk base in 1975 because of adverse and inclement weather in 1974. The Decca navigation system will be returned to the Hooper Island configuration for the summer season to serve the Beaufort Sea investigators. During March and April, the Decca system will operate from Sachs Harbour as master for the gravity and hydrographic surveys west of Banks Island. The main hydrographic surveys will be conducted in Kane Basin.

AIDJEX (Arctic Ice Dynamics Joint Experiment) gets underway in March 1975 and will terminate in April 1976. A camp will be established on the Arctic Ocean ice at approximately 76°N and 140°W. It is a joint program with the U.S.A. to study air-ice-water interaction with 10 Canadian experiments being conducted from the common platform.

The Arctic Island Pipeline Program will operate from Resolute with PCSP coordinating the logistics for all scientific investigators. The usual great number of geologists, geophysicists, biologists, etc., will pass through both Tuktoyaktuk and Resolute.

The 1975 program will involve an estimated 450 persons in about 140 projects. Air transport will be provided by one Bell 205A helicopter, four Bell 206B helicopters, one DHC-3 Otter, two DHC-6 Twin Otters, one Beechcraft D-185 and casually chartered fixed wing aircraft. The Pandora, Nahidik and Pressure ridge vessels will operate in the Beaufort Sea and be supported logistically and by the Decca chain. Camps will also be

maintained at Norway Island, Sachs Harbour, Baillie Island, Atkinson Point, Hooper Island, Herschel Island and Bathurst Island.

Long-term Plans

Field surveys and research will eventually cover the Canadian sector of the arctic continental shelf of North America, those parts of the Arctic Ocean basin that are of interest to Canada, and those parts of the Arctic Archipelago and arctic mainland of interest to the Department of Energy, Mines and Resources, and not investigated by other agencies. It is intended that program coordination and support logistics of the project shall be made available, where appropriate and approved, to scientific activities of interest to the Government of Canada in any part of Arctic Canada or the adjacent oceans.

DEPARTMENT OF THE ENVIRONMENT (DOE)

Responsibilities

Environment Canada is responsible for leadership at the national level in the management of renewable resources and the protection and enhancement of environmental quality. Its roles might be summarized as follows: in cooperation with appropriate agencies, to provide a national voice of knowledge and information on the natural environment and renewable resources;

to draft environmental requirements for the maintenance and enhancement of environmental quality and productivity;

to guide international and intergovernmental negotiators on environmental matters, or under appropriate conditions, to be the negotiators;

to manage the fisheries and migratory birds;

in cooperation with appropriate agencies, to manage the air, water, lands, forests and wildlife;

to implement and, where appropriate, to enforce legislation and regulations falling within its jurisdiction;

to monitor environmental activity in federally-controlled or-financed activities.

The Department of the Environment is comprised of five services: Atmospheric Environment, Environmental Protection, Environmental Management, Fisheries and Marine, and Planning and Finance. This organization is reflected in the presentation of the following material.

ATMOSPHERIC ENVIRONMENT SERVICE

Responsibilities

The Atmospheric Environment Service (AES) is responsible for the provision of historical, current and predictive meteorological, ice and sea-state information services for northern areas, and for advice and consultation on the effect of meteorological, ice and sea-state conditions on natural processes and on human activities in the Arctic. AES is responsible for carrying out research and development to improve the information services and for undertaking research to increase knowledge of atmospheric processes and the dynamics of ice and wind-wave interactions. AES is also responsible for monitoring air quality (composition of the atmosphere) and for providing advice and consultation on the effects of human activities on the Arctic atmosphere.

Review of 1974-1975

The AES operated two types of permanent meteorological observing networks to fill the continuing and increasing need for basic data by users of meteorological information in northern Canada. The stations in these networks carried out various observations according to internationally established standards. These observations included soundings of the atmosphere in depth with balloon-borne instruments (rawinsondes), synoptic surface based observations of instrumental and visual elements at three- or six-hourly intervals, and hourly-surface observations. A third permanent network of climatological stations added basic surface measurements of temperature extremes and of precipitation to those made by stations in the major networks.

At the close of the fiscal year 1974-1975, there were 76 principal stations of which 15 provided upper air (rawinsonde) data of temperature, humidity, wind direction, and speed to altitudes of about 100,000 feet as well as combining with the remaining 61 stations to report the standard surface-based information of air temperature, barometric pressure, humidity surface wind, cloud, and precipitation data. Eight more stations of these types were in operation than in 1973.

The climatological network consisted of 63 stations, an increase of 27 stations over 1973.

The programs of observations, particularly relevant to the northern area of Canada continued throughout 1974-1975. This included 25 snow survey sites reporting weekly measurements of depths and water equivalent of the snow accumulation, 58 reporting sites of freeze-up and break-up, data of the ice cover on water areas such as the sea, lakes and streams, 23 sites reporting weekly measurements of ice thickness, and 32 reporting shore ice conditions during the navigation season. Also, a new method of measuring ice thickness (hot wire) was tested at six sites. In addition to these land based observations, complete weather observations of the synoptic type were reported on regular schedule by 10 government and four commercial ships in northern waters including one commercial vessel operating on Great Bear Lake during the navigation season.

Observational programs of a more specialized nature continued at many of the Arctic stations. Six stations recorded soil temperatures at a number of levels below the earth's surface. Seven stations reported on water evaporation during the summer season of which three of these involve the use of a

radioactive trace element (tritium). Twenty-three stations measured the duration of bright sunshine; 15 stations participated in a noctilucent cloud observation program, and 15 recorded measurements of solar and terrestrial radiation.

The Upper Air Station at Resolute reports daily measurements of the total ozone in the atmosphere and these are supplemented by weekly measurements of the ozone layer in the high atmosphere by a balloon sounding instrument. Air turbidity and chemical pollutants in precipitation are measured at Fort Simpson with chemical pollutants in precipitation measured at Mould Bay.

Two programs continued to be conducted for other government agencies at AES Arctic stations: radioactive sampling of the atmosphere for the Department of National Health and Welfare at five sites, and observation of seismological records for the Department of Energy, Mines and Resources at Inuvik, Frobisher and Whitehorse. In addition to these last, AES provided accommodation and other support for EMR staff conducting seismic recording at Resolute, Alert and Mould Bay.

The AES continues to operate weather stations under the title High Arctic Weather Stations and provides a wide range of support to government and other scientific agencies at Resolute, Isachsen, Eureka, Mould Bay and Alert. Operation of the airport at Alert has been transferred to the Department of National Defence.

Four of the surface weather stations of the principal network, Cape Dorset, Koartak, Old Crow and Pond Inlet (est. 1974) are operated by Indian and Inuit people. A number of stations in the climatological network continued their operation staffed by indigenous people.

An inspection program continued as in previous years to provide on-the-job staff training and observing quality control, to determine the site selection and make the instrument installations for the establishment of new stations, and maintain the station instruments and equipment. During the year, a total of approximately seven man-years were devoted to this activity, the total including both the actual visits to the Arctic sites and the extensive preparations at the inspectors headquarters required beforehand. While this activity represents a relatively high level, experience shows that more time must be devoted to those environmental parameters, the difficulty of travel, and the extra time required in dealing with observing programs which are operated by

contractual arrangements and which in the cases noted above involve the training and guidance of native people.

A resident inspector assigned to Whitehorse is responsible for inspection, installation and maintenance activities for the Yukon. The number of resident inspectors in the area north of 60° was increased to three with two men on the Dewline plus the one in the Yukon.

The staffing of 76 principal weather stations during 1974-1975 was as follows:

| | |
|---|----|
| AES | 22 |
| AES/CATA (MOT) | 6 |
| CATA (MOT) | 16 |
| OMSI (DEWLINE) | 18 |
| Contract | 13 |
| PCS (Polar Continental Shelf) | 1 |

New stations for the principal surface network were established at Herschel Island (seasonal), Pond Inlet and Strathcona Sound.

To make this weather data available on a real time basis to both national and international users, as well as providing a return flow of forecasts and advisories, the AES uses a number of communication facilities. Where appropriate, both teletype and facsimile communications are used through a combination of MOT operated radio circuits, circuits in the DEWLINE forward scatter facilities, and lease of circuits from the common carriers, some of which use ANIK.

A number of stations in the Yukon and the Territories, including Inuvik, Whitehorse, Yellowknife and Frobisher have direct connection to the national weather facsimile system, operated by the common carriers. Other areas of the Central High Arctic are served by radio facsimile broadcast from VFE Edmonton. Ice reconnaissance aircraft landing at Inuvik or Frobisher make direct transmission of ice data in facsimile chart format over telephone or broadband circuits to Ice Central, Ottawa.

Weather forecasts for the North are issued on a scheduled basis by the AES. The technique of weather forecasting utilizes the data received from the North, as well as that from all the northern hemisphere. The Canadian Meteorological Centre (CMC) in Montreal is responsible for broad-scale weather analyses, prognoses, and selected forecast material. The Centre is supported by a large computer, has access to weather satellite data and also has access to products from the World Meteorological Centre in Washington. Output from the CMC is distributed via teletype and facsimile throughout Canada, including

the North, to support forecasting and weather service activities. The Arctic Weather Central/Weather Office in Edmonton produced forecasts for most of the Arctic. Forecasts for the Yukon are produced at Whitehorse. The design of an Environmental Prediction Service (weather, waves, and ice) was developed to support off-shore drilling in the Beaufort Sea in 1976. It is planned to test the system, as far as possible, in the summer of 1975, and a team was formed at the Arctic Weather Office at Edmonton to undertake the field aspects of this test.

A first for AES occurred during the year with the posting of two female upper-air observers to Eureka (HAWS), the first time that the observing staff at any of these sites in remote, isolated areas has been complemented by women.

Current and predicted weather information for northern areas was routinely supplied as follows:

High-level winds and temperatures for aviation produced by computer in Washington and distributed in Canada by facsimile.

Lower-level winds and temperatures for aviation produced by computer in the CMC in Montreal and distributed by teletype.

Weather forecasts for aviation in the North were issued from the Whitehorse Weather Office and the Edmonton Arctic Weather Office and distributed by teletype and radio.

Terminal and advisory forecasts were added for several new airports, used particularly by the oil industry.

A general weather summary and forecast for the Arctic is prepared at Edmonton. More detailed forecasts for the general public are prepared at Whitehorse for the southern and central Yukon, at Edmonton for the Mackenzie Valley, and at Frobisher for southeastern Baffin Island. These forecasts reach the public by the CBC northern networks and other private commercial radio and TV outlets.

Marine forecasts are prepared during the shipping season for arctic coastal waters, Hudson Bay and the inland waters of Great Slave Lake, Great Bear Lake and Mackenzie River. These forecasts are broadcast by MC Marine Radio Stations on regular schedules.

Fire-weather forecasts are prepared during the forest fire hazard season. Whitehorse prepares these for the Yukon Forest

Service and the Edmonton Arctic Central for the Northwest Lands and Forest Service.

Weather services consisting of briefing, presentation, and consultation are available at Whitehorse, Yellowknife, Inuvik, Resolute, Frobisher and Churchill. A more limited type of weather service is available at many other points, but these take the form of a request and reply service.

Instruments for measuring meteorological parameters were replaced or installed at a number of sites. Specialized instrumentation for use in the arctic climate and with a potential for automation are being developed and evaluated.

The Atmospheric Instruments Branch has been continuing development work on automated observing systems for use in northern Canada. To evaluate the development work to date, four Climatological Automatic Reporting Stations (CARS) have been placed on operational tests in the North. A special CARS station was established on an arctic island in the western arctic and was equipped with data retransmission equipment that reports via an Earth Resources Technology Satellite (ERTS) link. Further studies are currently underway to discover other uses for ERTS links for data retransmission. Work is continuing on instrumentation development and testing for the Beaufort Sea Program.

The preliminary work has been completed for the installation of a Climatological Automatic Reporting Station (MARS) at Port Radium, NWT. The shipping of cables and cabling was completed early in 1975. This station when installed will be the first "on line" automatic reporting station in the Northwest Territories. The Upper Air System Maintenance Program was expanded to include the Electrolyser Hydrogen Generator Equipment. Maintenance technicians made several routine visits for annual inspection of equipment at the 15 upper air stations in northern Canada.

The Central Services Directorate provided a broad range of consultation in the meteorological aspects of design and operation, and in environmental impact problems in response to the continuing high level of exploration and development activity in the Arctic. Planning and initial work on a climatic study of the Canadian Arctic Island and adjacent waters was begun. A study of the occurrence of ice fog at a number of sites was completed. Work on the climate of the Yukon was pursued throughout the year. This study is intended to be a comprehensive reference work to meet the needs of a wide

variety of users. Studies in support of the Beaufort Sea Project were carried out. The interrelationships of winds, waves, air stability, and ice accretion were particularly considered. The Branch supported a study continuing at the Arctic Weather Central on the evolution of weather systems associated with extreme wind/wave events in the Beaufort Sea. Initial planning was begun on a project to determine the agricultural potential of portions of the Mackenzie and Liard River Valleys in NWT and areas of land near Watson River, Whitehorse, and Dawson in the Yukon. A two-part meteorological study of the Strathcona Sound area to provide information for airport location and design was completed. In-depth meteorological studies to support planning for the development and usage of Nahanni and Kluane National Parks were continued and completed in the latter case.

As in previous years, the Ice Branch of the Central Services Directorate continued its ice services in support of marine activities in northern waters. Some 3,680 hours of fixed-wing airborne reconnaissance, using the two contracted Electra aircraft, a DC-3, and military Argus flights, were undertaken. Remote sensors on board the Electras played a significant role in the data acquisition, both for real time ice information and climatological archiving of data. For the first time, a pre-season Arctic round robin was conducted as early as March, 1975 to study winter developments of ice cover in the Arctic and provide input into pre-season forecasts. Special emphasis was also given to additional reconnaissance in the Beaufort Sea, both for support of shipping in unusually heavy ice conditions in the region and as part of the separately funded Beaufort Sea Study. Observers also continued their presence on MOT Coast Guard ice-breakers for shipboard and helicopter observing and support as well as provision of weather observations.

Ice Forecasting Central, Ottawa, continued to provide tactical ice forecasts and long-range outlooks as in previous years. The dissemination of such forecasts and charts proceeded through normal channels during the Arctic summer shipping season with no major difficulties. Two new communication links were established: the Bell data phone link from Resolute, and telecopier reception via ANIK satellite. Use of these links will result in increased efficiency once "teething" problems are resolved. In order to supplement the usual data acquisition, arrangements were made to receive facsimile

broadcasts of realtime NOAA and selected ERTS imagery from Prince Albert, Saskatchewan. This facsimile worked well with "blown-up" ERTS imagery, however, the quality of NOAA pictures proved to be inadequate.

Break-up and freeze-up dates were near normal in the eastern Arctic. A late break-up and early freeze-up in the western Arctic offered difficulties and shipping delays most of the season. A tongue of close-pack ice from the Beaufort Sea persisted in coastal areas from Cape Bathurst to Cape Parry, seriously hampering shipping and necessitating additional support by Ice Central. Support was also given to the drilling platform brought into Hudson's Bay by the Aquitaine Company. Special forecasts were issued in support of this platform and its accompanying ice breaker, particularly during the period as it was towed into drilling position and during its departure through Hudson Strait for the North Sea.

In September of 1974, the Ice Climatology Division was formally established as a section of the Ice Branch. The Division is based in Ottawa, and its activities in the North during the year were confined to a special study of the Beaufort Sea, and to a digitizing program of ice data in the Hudson Bay — Davis Strait area. The Beaufort Sea study was financed by the Beaufort Sea Project itself and was done on contract under the guidance of the Chief of the Division. The digitizing program in the eastern Arctic extended northward only to latitude 65° and will ultimately form the basis for an ice atlas of Hudson Bay, Hudson Strait, and approaches.

Central Services Directorate also continued to provide training in support of forecast, presentation and data acquisition activities. This included training of Radicians for weather observing duties on the Dewline and a workshop in support of the Beaufort Sea Project. Five weather courses were presented in Whitehorse to forestry officers of the Yukon Lands and Forest Service.

The Research Directorate continued developmental work in atmospheric modelling applicable to the weather forecasting system with the purpose of improving weather forecasts in all areas of Canada. A design for a real time total environmental prediction system in support of oil exploration in the Beaufort Sea area was developed, which, with suitable modifications will provide future support to other areas of the Arctic. Weather satellite photographs of all

Canada were received, processed and distributed, and development was continued on satellite systems applications for the Arctic, and on automatic observing stations, including a Geostationary Operational Environmental Satellite (GOES) transmission package, for deployment over Arctic areas. Development work was begun on automated satellite data processing systems, the application of high resolution picture transmission (HRPT) data to ice infested waters, and STOL port design (with the Ministry of Transport). Activities in the air quality field included:

- air quality observations (turbidity and precipitation chemistry) at Fort Simpson under the world-wide air quality monitoring program of the World Meteorological Organization;
- instrumentation of a high tower at Mould Bay to study the behaviour of low-level inversions as these affect the dispersion of pollutants;
- completion of a study of relationships between meteorological conditions and damage to lichens by sulphur dioxide.

Plans for 1974-1975

Field Services Directorate

Data acquisition facilities and programs will be expanded or improved as indicated below:

High-Arctic Stations

Continuing construction, improvement and rehabilitation at the High-Arctic Stations.

Ennadai Lake Relocate the instrument area.

Strathcona Sound Increase the surface observing program.

Dewline Sites Weather Stations. The following sites will be increasing the number of regularly scheduled aviation and synoptic reports from four per day to eight per day:

Kamakuk Beach
Shingle Point
Nicholson Peninsula

The following sites will be increasing the number of regularly scheduled aviation

reports from four per day to 24 per day (hourly):

Cape Young
Shepherd Bay

Central Services Directorate

Completion of the various Beaufort Sea, Nahanni National Park, and climate of the Yukon studies is expected.

A further National Park study, this one for Baffin Island, will be undertaken during the year.

Most of the climate of the Arctic Islands study will be completed.

Work on the agricultural potential of the selected areas in the North will be continued.

A revision of an earlier study, to be based on the 1941-70 normals, of the climatic classification of the NWT for recreation and tourism will be started this year.

A study on the variation from the mean of selected meteorological and related parameters will be undertaken for the Arctic. An attempt will be made to relate any observed anomalies to upper flow configurations.

By virtue of our studies for the Beaufort Sea Project, we will be following with interest the testing of automatic data gathering equipment to be located on the ice of the Beaufort Sea and the use of satellites for gathering data and distributing forecasts for that area. These are not, however, directly Meteorological Application Branch activities.

Research Directorate

The design of satellite reception facilities and distribution systems for Arctic areas.

Vertical Temperature Profiling Radiometer (VTPR) assimilation for Arctic areas.

Site suitability tests for a baseline air monitoring station at Alert Bay.

Studies of the water balance and hydro-meteorological processes of Baker Creek Basin.

Measurements of atmospheric No 2 at Resolute.

Long-term plans

Generally, we will continue to increase our knowledge of the Arctic atmospheric

environment, its effect on other natural environmental processes and on human activities, and the effect of human activities on the Arctic atmospheric environment.

More particularly, we will continue to support the extension of the operational climatological atmospheric data acquisition network in the Arctic, specifically through the utilization of automatic stations. This is essential to improve our knowledge and the climatological services in the area. It is also expected that more contract stations, particularly climatological stations, will be operated by native people.

FISHERIES AND MARINE SERVICE

Responsibilities

The Fisheries and Marine Service has overall responsibility for fisheries research and operations throughout Canada and for the implementation of oceanographic and hydrographic programs of the Federal Government. Specific responsibilities in the North concern the maintenance and development of fish and marine mammal stocks and assessing the impact of future development of these stocks; upgrading commercial fishing practices and carrying out physical and chemical studies of processing plants; assessing inventories and characteristics of angling stocks and monitoring recreational fishing activities; and carrying out physical and chemical studies of the arctic marine on such matters as tidal characteristics, wave regime, pollutants and the properties and distribution of ice. Continuing activities also include hydrographic and resource studies of northern waters and the publication and maintenance of up-to-date nautical charts, tide tables, etc. of the region.

Resource Management Branch

Responsibilities

- To protect and conserve fishery resources and adequate environment.
- To manage and seek improvements in the management of commercial, sport and subsistence food fisheries.
- To gain a thorough knowledge of the aquatic resources of the North so that the impact of future developments can be accurately assessed.

Review of 1974-75

Plans for construction and alignment along the Mackenzie, Dempster and Liard

highways were reviewed and specifications developed for stream crossings to ensure protection of the fishery resource.

Field evaluations of completed highway sections were conducted to ensure conformity with proposed plans.

Studies were completed and reports published for fish swimming performance and model culvert baffle installations intended to promote the passage of fish through stream crossing structures.

Guidelines for highway construction and operation in the NWT to ensure protection of the fishery resource were developed and published.

The final year of pipeline-related studies concentrated on critical areas and times, pipeline crossing sites, report and catalogue completion.

The inventory of the fishery resource and monitoring of oil and gas activities in the Beaufort Sea continued.

Fishery resource studies were conducted in relation to proposed hydro power developments on the Snare and Great Bear rivers.

Studies were conducted on the upper reaches of the Mackenzie River and on tributaries to Great Slave Lake in relation to ongoing and proposed dredging activities.

A creel census and sampling program was conducted on the sport fisheries of Great Bear and Great Slave Lakes.

A monitoring and assessment program on the commercial and domestic fisheries of Great Slave Lake and the Mackenzie Delta was conducted.

The arctic char commercial fisheries in Pelly Bay, Nettle Lake and along the west coast of Hudson Bay were studied.

The sport fishery of Tree River and Albert Edward Bay in the Cambridge Bay area was monitored.

A program for the monitoring and assessment of marine animals at Admiralty Inlet and Strathcona Sound was initiated.

Studies were conducted in the Strathcona Sound area on the effects to the aquatic resource resulting from exploratory drilling techniques.

The land-use survey of the fish resources in the NWT was continued.

A fish stocking program of pothole lakes in the Yukon Territory was conducted to determine growth and management potential.

Cohoe smolts were stocked in pothole lakes in the Yukon to determine acceptability for sport fishing.

The major salmon (chinook and chum) distribution and enumeration program in the Yukon River system was continued.

In connection with the industrial development monitoring program, the effects of hydro construction and minimum flows at the outlet of Aishihik Lake were monitored. The Mayo River hydro control structure at Mayo Lake was also reviewed with regard to the effects on the fish resource.

The aquaculture program, begun last year, was completed and a final report is now being prepared.

A fisheries management program within the Yukon Territory continued with emphasis on the development and utilization of the commercial freshwater fishery.

Plans for 1975-76

Fishery resource studies related to N.C.P.C. hydro development plans will be continued on the Great Bear River with new studies planned for Lake LaMartre.

Monitoring of highway activities and evaluation of highway proposals will continue.

A prototype study to determine the effect on fish passage using culvert baffles is planned for the Redknife River near Fort Simpson.

An inventory of the fish resources within the region of the proposed Eastern Arctic Pipeline will be initiated.

Monitoring and control of the Beaufort Sea oil and gas activities will continue.

Participation and contributions to the Mackenzie Valley Pipeline Inquiry will continue.

Plans for gas plant installations in the Mackenzie Delta will be reviewed and monitored.

The monitoring and assessment of the char fishery in the NWT will be continued with some expansion in the Cambridge Bay area.

New studies to monitor and assess the narwhal harvest at Arctic Bay and Pond Inlet, the beluga harvest at Resolute and Inuvik and the walrus harvest at Coral Harbour are planned.

The land use survey in the NWT will continue.

A major hydro development proposal for the Yukon River, with emphasis on the Pelly River site, will be evaluated to determine the potential effect on the fish resource.

The coho salmon stocking program for recreation purposes will be expanded in the Yukon region in conjunction with the Territorial Game Branch program.

The Upper Yukon River cataloguing and inventory program will be continued with possible expansion into the Dawson region.

Long-term Plans

Maintenance and development of fish and marine mammal stocks in the North through the proper use of resources and equipment.

Inventory of the fishery resource potential of the Northwest and Yukon Territories.

Establishment of a comprehensive plan to manage other lakes for sport and commercial fishing.

Inventory and management of the stream sport fisheries.

Efficient management of the arctic char fisheries of the north coast.

Development of criteria for the protection of aquatic resources from pollution and environmental disturbances.

Minimization of the adverse effects of industrial development by making recommendations to the developer, enforcing regulations and understanding the resource.

Development of new fisheries through aquaculture and the harvesting of hitherto under-utilized species.

Site-specific investigations and management of the fisheries of Great Slave and Great Lakes and the coastal fringes.

Inspection Branch

Responsibilities

- Monitoring and standardizing of plants to ensure construction equipment and operating regulations are followed.
- Technical assistance in handling, processing, transportation, storage and distribution of fish and fish products.
- Laboratory analysis of domestic and imported products, plant sanitary surveys, water and ice analysis.
- Inspection of freshwater species to ensure market acceptance of domestic and exported fish and fish products.
- Inspection of fishing vessels for compliance with national vessel inspection regulations.
- Assistance to industry towards cost of constructing, equipping or modifying ice-making or ice-storage facilities.

Review of 1974-75

Annual registration of processing establishments in the Northwest Territories. (There are six registered processing plants,

one registered cannery and numerous non-registered packing plants.)

Setting up of an adult education program in cooperation with territorial officials to aid primary commercial fishermen in catching handling, and storing freshwater fish.

Collection of end-of-line samples, water and ice samples, in-plant sanitary surveys, quality demonstration, T. Craussus determinations.

Setting up training courses at various locations for primary commercial fishermen and industry management personnel.

Surveying 83 of 95 fishing vessels as part of a pre-certification program.

Plans for 1975-76

To complete surveys of commercial fishing vessels as the basis for an inspection and certification program.

To complete analytical surveys for hazardous substances on all affected freshwater species for commercially fished waters and imported fish and fishery products and to provide analytical services to other branches, services and private sector on contaminants and sources of industrial pollution.

To develop grade standards for fresh, frozen, canned, packaged and cured fish and fishery products in order to establish baseline data on present quality levels from boats, plants, vehicles and retail outlets.

To complete field retrieval and computer processing and working data on all facets of quality control and production including harvesting, transporting, processing, distribution, and all hazardous substances and labelling requirements on domestic and imported fish and fishery products.

To conduct design development and modification studies on present construction equipment and operating requirements of plants within the central region.

To promote fish chilling assistance re: ice-making and ice-storage facilities in the Northwest Territories.

To become significantly involved in vessel insurance, vessel subsidy, small craft harbors surveys in conjunction with other federal and provincial agencies.

Long-term Plans

The continued inspection of domestic and imported fish and fish products to maintain standards pertaining to hazardous substances, organoleptic, bacteriological and labelling requirements, and to assist industry in improving processing techniques and product development.

To complete current surveys aimed at determining what facilities are used for holding and transporting fish, i.e. boats, land vehicles and planes, to improve quality and eliminate rejection due to spoilage of five per cent of total fish landings.

To implement a comprehensive fishing information system to improve the fish trade in Canada through diversifying products and penetrating additional export markets.

To initiate a certification program for commercial fishing vessels.

To promote increase in ice supplies and chilling facilities in primary fishing industry which will reduce waste of resource, improve fish quality and increase fishermen's earnings.

To carry out surveys on over 20 unregistered fish plants to determine construction, equipment and operating compliance with basic sanitation as a requisite feature.

Freshwater Institute, Winnipeg, Manitoba

Review of 1974-75

The winter program of 1973-74 was carried out successfully and open-water studies began in May, 1974. Yellowknife was again the field HQ, with field bases at Fort Simpson and Inuvik. The research vessel *Stenodus* was frozen in for the 1973-74 winter in Inuvik and was used in support of the Delta program during the open-water season of 1974-75.

The intensive studies of experimentally manipulated eco-systems were continued through 1974 by monitoring the longer term effects of three Mackenzie Delta lake oil spills and refining the experiments dealing with the incremental additions of suspended sediment to a section of river (Harris R.). Supplemental studies designed to round off the pipeline study were carried out during summer 1974 in the Delta area. These included a lake survey and experiments on the effects of oil and a dispersant on selected lake biota.

The data for rates of erosion and suspended sediment transport within watersheds under study were analyzed and hypotheses generated.

A detailed study of arctic char was started at Nauyuk Lake on the Kent Peninsula. The objective of this study is to provide details on the population dynamics, productive capacity, and life-history of this important species; this information is of prime importance for improving management strategies. A large number of char were

tagged on their seaward migration in June and again on their return from the sea in August and early September. A preliminary analysis of the population structure was carried out.

The study on whitefish exploitation in four lakes north of Yellowknife was continued.

The intensive study of the biogeochemistry of arsenic in selected Yellowknife area lakes was continued and expanded to provide data on the relative proportions of the oxidized and reduced form of this pollutant in other adjacent lakes.

All equipment was stored in Yellowknife at the end of the season and the pipeline study ended March 31, 1975.

Plans for 1975-76

To complete analysis of data from the pipeline study and publish same as reports, technical bulletins and scientific papers.

The study of biogeochemistry of arsenic in Yellowknife lakes will be continued with an expansion of the study area and development of biological programs designed to investigate the effects of the reduced and oxidized forms of arsenic on selected lake biota together with their concentrations in trophic levels.

A new study concerning the impact of an eastern Arctic pipeline will be activated in 1975. A synoptic survey of the distribution and abundance of aquatic invertebrates along the proposed pipeline corridor from Spence Bay north will be carried out together with an intensive study of the aquatic invertebrate/char relationships in a single lake/river system.

The project on arctic char on the Kent Peninsula will be continued. It is hoped to complete the preliminary analysis of population structure and also to determine the details of the migratory patterns of this species.

Long-term Plans

An assessment of the aquatic ecology of selected lakes in the Yellowknife area in relation to concentrations of the reduced and oxidized forms of arsenic, and the physical/chemical factors which affect them.

An assessment of the effects of pipeline construction, operation and maintenance on selected Eastern Arctic watersheds in relation to certain ecological parameters.

Improved management techniques for northern fish stocks, particularly whitefish,

Arctic trout and arctic char will be developed. Methods to assess proposed and ongoing fisheries, both commercial and sports, to ensure optimum harvest, will be developed.

Arctic biological station, Ste. Anne de l'Isle, Que.

Responsibilities

Biological investigations of the marine environment in Canada's North, especially the distribution and abundance of marine mammals and fishes, and the ecological factors that control production.

Review of 1974-75

Marine Mammals

A detailed study of local areas of high productivity of ringed seals was continued in the Holman areas, western Victoria Island. Factors such as ice type, snow cover, availability of food species, and predation rates by foxes, bears and man were quantified. A short-term study of the effects of crude oil pollution on ringed seals was carried out at Brown's Harbour, near Cape Parry in the western Arctic. Live animals were transported to holding facilities at the University of Guelph for further studies on oil pollution and bioenergetics. Aerial surveys of ringed seals were carried out in James Bay and Hudson Bay during May and June.

For many years a population of hooded seals has been suspected to exist in Davis Strait. On March 25, 1974 a large breeding group was discovered by our observers aboard a Canadian Armed Forces 'Argus' aircraft.

The white whale was studied as part of the Beaufort Sea project. Some 5,000 animals were counted in the Mackenzie delta area where calving occurs in the river estuary. In Lancaster Sound, a detailed study was made of the behaviour of a population of about 1,500 white whales which gathers annually in the estuary of a small river emptying into Cunningham Inlet, northern Somerset Island. A Pond Inlet, a preliminary survey was made of the summer distribution of the narwhal.

A survey of bowhead whales in the western Arctic showed that animals are present from May to September. The numbers in this sector of their summer range were not accurately known but may be little more than a hundred.

Biological Oceanography

Studies continued on the marine ecology of the Eskimo Lakes, an estuarine inlet of the Beaufort Sea lying just east of the Mackenzie Delta. Physical oceanography and nutrients were observed on a regular basis to support biological sampling (bacteria, benthos, plankton), and experimental work on invertebrate physiology was continued.

Under the Beaufort Sea program, studies were continued on the role of bacteria in nutrient cycling and the distribution and abundance of heterotrophic bacteria in the marine environment. Long-term zoobenthic investigations were continued at several localities. Physiological studies involving temperature and salinity tolerances and effects of varying environmental factors (including crude oil) on activity and metabolism of marine invertebrates were carried out.

Marine Fishes

Under the Beaufort Sea program, studies were carried out on the distribution and abundance of marine and anadromous fishes in the shallow inshore areas of the south-eastern Beaufort Sea, particularly Kugmallit Bay at the mouth of the eastern branch of the Mackenzie River. Studies were also carried out from M.V. *Theta* on the distribution and abundance of larval pelagic fishes in the Beaufort Sea, but bad ice conditions restricted the area in which the vessel was able to operate.

Under the James Bay program, investigations were continued on the distribution, abundance and migration of marine and anadromous fishes in the estuaries of the Eastmain and La Grande rivers.

Plans for 1975-76

Studies of ringed seal breeding areas will continue at Holman. Areas of high and low productivity will be compared, and factors affecting production and survivorship will be quantified. A short-term study of the effects of seismic explosion on ringed seals will be carried out at Brown's Harbour, Cape Parry, and further data will be collected for a continuing study of bioenergetics of seals.

Several hundred seals will be captured by nets and tagged as part of a long-term study on the migration of this species. Live seals will be transported to facilities at the University of Guelph for further studies on bioenergetics.

Further studies on white whales in the Mackenzie Delta and southern Beaufort Sea will be undertaken. Reliance of these stocks

upon specific inshore and offshore areas will be assessed.

A renewed study of the narwhal will be undertaken by small teams accompanying Eskimo hunters at Arctic Bay and Pond Inlet.

Further studies on bowhead whales will plot migration routes and summer distribution, with special attention to possible oil exploration and drilling activity in these areas.

Additional information on the utilization of offshore waters by anadromous fish is planned for Mackenzie Bay. A vessel under charter to the Beaufort Sea project will also provide facilities for sampling offshore planktonic fish larvae in the project area.

Investigation of anadromous fish in the Eastmain and La Grande rivers in James Bay will be continued.

A final season in the Eskimo Lakes will comprise mainly bacterial, plant and invertebrate physiological studies. A cruise in the south Beaufort Sea, extending as far north as the shelf, is planned with Beaufort Sea project support. This will continue last year's survey, add much to the size of the area covered, and give support to many of last year's observations.

Long-term Plans

Biological assessment of fisheries resources will be continued to provide information for the management of fish and marine mammal stocks. Emphasis will be on population studies but physiological studies will attempt to relate these animals more closely to their environment, and to the effects of disturbance by man. Marine productivity studies will be continued in order to provide a basis for assessment of possible environmental changes caused by exploitation of non-renewable resources such as oil and gas.

Ocean and Aquatic Affairs

Responsibilities

- To carry out hydrographic and oceanographic surveys in northern waters. To produce and distribute nautical charts, sailing directions, tide tables and reports based on survey activities and other sources.
- To carry out physical and chemical studies of the Arctic marine environment to determine the circulation, wave regimes, tidal characteristics, properties and distribution of ice; and to develop

mathematical simulation models on the behaviour and movements of ice and pollutants in the Arctic archipelago.

Review of 1974-75

The Beaufort Sea Project, consisting of 32 separate environmental studies, is to provide a preliminary environmental impact assessment of oil industry exploratory drilling activities in the Beaufort Sea by the end of 1975. Geological, fisheries and oceanographic studies used the *MV Pandora* and *MV Theta* in the Beaufort Sea supplemented by dives using *Pisces IV*. An unusually heavy ice year prevailed which markedly reduced the expected field data. In November of 1973 and in May 1974, eleven offshore tide gauges and 12 current meters were placed through fast ice. The heavy ice cover prevented *MV Theta* from reaching most of the locations during September so that only two tide gauges and one current meter were recovered. Oceanographic stations occupied by *MV Theta* showed that the Mackenzie River water formed a thicker and colder layer than usual with the southerly positioned ice pack edge acting as a dam to the fresh water. Near-shore tide gauges and those recovered offshore contained records which have been used to verify a storm surge numerical model. Of interest was a storm surge recorded during late January, 1975. This surge had been preceded by strong south winds which presumably had driven the pack ice northward from the shore-fast ice. The surge commenced when strong north winds followed and terminated before the winds ceased. During August and September, surface currents were traced using a Twin Otter to track surface drift buoys. During March, 1975, oceanographic stations were occupied west of Banks Island and at the west end of Amundsen Gulf, the latter from an ice camp.

An extensive survey program using through-ice sounding methods was carried out by hydrographers assigned to the Polar continental Shelf Project (PCSP) with almost all the entire fiord system of Eureka and Nansen Sounds being completed. Charting continued on the Mackenzie River and a brief reconnaissance survey was undertaken on the Liard River.

CCGS Narwhal, assigned to full-time hydrographic operations for the season, completed the survey of Chesterfield Inlet from the entrance of the Inlet to Baker Lake.

Frozen Sea Research Group activities involved oceanographic field trip to D'Iberville Fiord April to June and August, 1974. A hydrological program was carried out in June and August. They were involved directly in the "oil in ice" project under Beaufort Sea and many other programs. There was a continuation of arctic instrument development including bottom and under ice positioning and telemetering systems for current meters and experimental arctic use of advanced sonic current meter. *CSS Baffin* completed multidisciplinary surveys in Lancaster Sound and Maxwell Bay. Reconnaissance charting was conducted within a number of arctic waterways by hydrographers operating from MOT icebreakers, with detailed surveys being conducted of a beaching area in Frobisher and another in Pangnirtung. *CCGS John A. Macdonald* was able to proceed as far north as Greely Fiord via Eureka Sound. Monitoring continued on an opportunity basis, of the occurrence and distribution of floating petroleum residues. The Air-Sea Interaction Group at Bedford Institute of Oceanography, in a continuing series of experiments, wind drag, and evaporation at the surface of pack ice are being measured. During July, 1974, measurements of drag on ice ridges were conducted in Robeson Channel.

The 1974 James Bay summer oceanographic program consisted of reoccupying the stations set up and occupied in the 1972 and 1973 surveys.

The First James Bay Workshop, held at C.C.I.W. in June, 1974, brought together scientists, working on the physical and biological oceanography of James Bay, to present their data, analyses and interpretation as completed to date.

A combined program involving the Canadian Hydrographic Service, the Gravity Division of the Earth Physics Branch, EMR, and the Oceanographic Research Section was carried out this winter in James Bay. The oceanographic survey involves through-ice measurements of temperature and salinity over the entire Bay, including the La Grande and Eastmain Estuaries.

Plans for 1975-76

MV Pandora and *MV Theta* will again operate in support of Beaufort Sea Project studies. MOT is providing the *MV Nahidik* for short periods to support geological studies. Tide gauges and current meters will be installed during April using a helicopter. These are to be recovered in September by

MV Pandora. During April and early May, a helicopter will be used to support physical oceanography. Later, in the summer, surface currents will be traced using a fixed-wing aircraft to track surface drifters.

Hydrographers assigned to the PCSP will be obtaining data in Nares Strait and along the west side of Banks Island. Horizontal control will be established in the Belcher Channel, Byam Channel, and Peel Sound areas for use in future hydrographic surveys.

The Mackenzie River hydrographic survey program will be continued with Liard River, Bear River, Hay River, and Mackenzie Bay receiving major emphasis.

The Frozen Sea Research Group will undertake studies at channel crossings of Polar Gas pipelines. The Floating Ice Section in Ottawa will also conduct studies under this program.

Central Region plans to participate in a multidisciplinary summer survey in 1975 in Hudson Bay. The program will be oriented largely to field testing of new instrumentation and to collection of baseline oceanographic CSTD data while underway.

CCGS Narwhal, again assigned to full-time hydrographic operations for the coming season, will undertake a multidisciplinary survey in Hudson Bay and the James Bay winter multidisciplinary program will continue again next year. The survey of Povungnituk will be completed.

CSS Baffin will conduct detailed charting in the northern extremity of Foxe Basin, of Igloodik Harbour and Approaches, and Halls Beach.

Tentative assignment of an MOT icebreaker has been made for the continuation of charting the North West Passage, with Jones Sound as an alternative. As in past years, hydrographers will continue reconnaissance charting on an opportunity basis from MOT icebreakers on patrol/escort duty.

An evaluation of an *in situ* gauge with data storage and telemetering system will be made in conjunction with the *CSS Baffin* surveys.

The Ocean Circulation Division will conduct an oceanographic study in the Labrador Sea of the current system and convection processes in March, 1976.

Ice drag experiments will be continued in April, 1975 at the AIDJEX camp in the Beaufort Sea.

Long-term Plans

To complete standard hydrographic and resource surveys of the northern waters as

on as possible and to continue the publication and maintenance of up-to-date nautical charts on the regions. To carry out reconnaissance surveys when it is necessary to start ahead of the regular surveys. To maintain reliable sailing directions as published in the Pilot of Arctic Canada. To publish tide tables to meet the needs of northern navigation and to carry out research to enhance knowledge of tides in northern waters. To gather and interpret chemical and physical oceanographic data for a study of environmental conditions and properties and the dynamic processes that effect the distribution of potential pollutants; the advection and mixing of arctic waters, and the formation and movement of ice.

Economics Branch

Responsibilities

- To provide economic intelligence relative to the commercial and sport fisheries.
- To effect a larger economic return from the aquatic resources of the North and a more equitable distribution of the benefits generated by the use of these resources.

Review of 1974-75

A second annual survey of anglers was undertaken describing characteristics of fishing activity by resident and non-resident sport fishermen.

Commercial fisheries production was analysed by lake and by fishermen to generate income distributions and catch per effort statistics.

Processing activities in the Northwest Territories were analysed.

Plans for 1975-76

- To continue the annual survey of anglers.
- To continue to provide, and develop, economic intelligence on the recreational fishing industry and the primary, secondary and tertiary sectors of the commercial fishery.

Long-term plans

- To conduct quinquennial surveys of anglers to develop a demand function for the recreational fishing resources of the North.
- To develop a model of the commercial fishery incorporating the short and long-term biological supply functions and the

economic demand function to stimulate effects of manipulating stocks, fishing pressures and management regimes.

ENVIRONMENTAL MANAGEMENT SERVICE

Responsibilities

The Environmental Management Service is responsible for overall co-ordination of work carried out by the Lands, Forestry, Wildlife and Inland Waters Directorates. It also deals with environmental assessments and provides general leadership in the management, for continued productivity, of some of Canada's major renewable resources. In general, its responsibilities include: initiation of national programs for the planning and implementation of water resources development and water quantity and quality research; development of policies and systems for hydrometric data collection and networks, water and ice inventories and forecasting; national land use policy and planning initiatives in co-operation with other federal and provincial agencies; land use studies related to use dynamics of the resource; management and operation of a national land data bank; provision of a federal response to forest research and related service needs of provincial governments and woodbased industries; financial support and a research capability oriented towards environmental forestry including forest management of federal lands; migratory bird conservation and protection; wildlife advisory services and information to government and other agencies; wildlife research on toxic chemicals, wildlife pathology, interpretation, information and biometrics, wildlife research and management in cooperation with provincial and territorial governments; defence and encouragement of rare and endangered species; assessment of the effect of resource development and other operations on wildlife; and management of regional structures for federal forestry, water and wildlife operations.

Lands Directorate

Responsibilities

To supply and analyze data for land-based renewable resource inventories, regional planning, and the assessment of resource development impacts.

Review of 1974-75

Land Evaluation and Mapping Branch

In conjunction with the Arctic Land Use Research (ALUR) Program of DIAND, 17 Land Use Information Series maps covering the Mackenzie-Selwyn mountains area along the Yukon-Northwest Territories border were published in the summer of 1974. The maps, produced at a scale of 1:250,000 (1 inch to 4 miles), integrate a wide range of data on renewable resources and related activities. Each map is complete with a detailed legend and the series includes information on: critical and important wildlife areas; fish resources and fishing; recreation and tourism potential and facilities; hunting and trapping areas; notes on communities; development areas and block land transfers; the location of hydrometric and water quality stations; archaeological and historical sites; proposed I.B.P. reserves; and parks and sanctuaries.

In early 1974, the series was extended to include 24 maps covering the area around Great Slaves Lake and north to Great Bear Lake. Field studies were undertaken by the Canadian Wildlife Service, the Fisheries and Marine Service, the Indian Brotherhood of the Northwest Territories, (under contract), and the Lands Directorate, to generate data for the program. The maps are being compiled and drafted by the Lands Directorate and will be published during the summer of 1975.

As part of the Land Use Information Series an inventory of outdoor recreation potential was completed for the 24 maps referred to above.

Land Use Planning Branch

As part of an ongoing review of existing land use policies and legislation in Canada, the Land Use Planning Branch will be publishing a report on the northern Territories towards the end of 1975. The paper will discuss the land use problems and the major concerns of the Territories with regard to land use and land ownership. The role of the territorial and federal departments engaged in land use planning and land management will be outlined and the pertinent legislation examined.

Plans for 1975-1976

Most of the above programs will continue in 1975-76. The Land Use Information Series will continue with the update of approximately thirty map sheets along the

Mackenzie Valley, with publication expected in mid-1976.

Long-term Plans

Long-term plans for the Lands Directorate reflect its association within the Department of the Environment. Emphasis will be placed on studies and plans of land resources in cooperation with other agencies and services. It is anticipated that the Land Use Information Series will be extended to include the Great Bear Lake and Banks Island regions.

Canadian Forestry Service

Responsibilities

- To advise and assist the Department of Indian and Northern Affairs on forestry operations, practices and staff training.
- To participate in the conduct of environmental impact assessments of major industrial developments.
- To conduct forest insect and disease surveys; to prepare forest inventories and maps of forest and other vegetation.
- To conduct ecological research in the North.
- To compile national statistics on forest stocking, growth and depletion and annual fire losses.

Review of 1974-1975

Pacific Forest Research Centre

In assuming responsibility in the Yukon Territory for forest research and service operations in 1974, an agreement was reached with Department of Indian and Northern Affairs to establish the Yukon Forest Research Advisory Committee under the Chairmanship of the Director of the PFRC. The role of the committee is to provide a means by which the Director can receive information on a regular basis on the needs of all forest resource management agencies for the services of the Pacific Forest Research Centre and guidance from responsible and knowledgeable officials as to the research priorities of the various problems.

The research and services of the Pacific Forest Research Centre will be aimed at improved knowledge of basic timber, tree and forest land resources, maintenance of growing stock, treatments to obtain full growth potential and forest protection in all stages of development. In addition, research

and services are aimed at the development of improved methods of managing and protecting the forest cover for optimum water yields, recreational opportunities, wildlife habitat and other environmental situations where commercial harvesting is not a prime concern or is otherwise restricted.

Work undertaken in the Yukon during 1974-75 included a three-day workshop at Watson Lake for Yukon Lands and Forest Service staff on silvicultural harvesting systems, logging methods and forest engineering, seed production and collection and reforestation methodology. Consultative services were provided relative to the Whitehorse forest nursery, Yukon timber regulations and timber sale administration. Timber and milling operations in the Watson Lake and Whitehorse Districts were inspected during a week-long tour in March and plans were formulated for 1975-76.

A forest insect and disease survey was made in the readily accessible areas from May and June to early July. Light defoliation of eastern larch north of Watson Lake and infestations of woodborers degrading stock-piled logs at Watson Lake were observed. Spruce broom rust, spruce needle rust and terminal dieback of white and black spruce were noted in various areas. A report "Forest Insect and Disease Conditions 1974 Yukon Territory" was issued. A one-week training session in the recognition of common forest insects and diseases was given to a Yukon Lands and Forest Service staff member at Victoria to expedite liaison between the two agencies.

Advice was given to the Yukon Lands and Forest Service on forest fuel management modification program in the Whitehorse area; specifications and services as scientific authority for contract mapped fuels in and around Whitehorse and a lecture workshop on the Fire Weather Index system for Yukon Lands and Forest Service Staff members.

Forest economics contact and liaison was made with the Yukon Lands and Forest Service with respect to forestry problems requiring economic expertise.

Northern Forest Research Centre

The Northern Forest Research Centre phased out its program in the Yukon during 1974 but retains its responsibilities in the Northwest Territories. The Pacific Forest Research Centre will now assume responsibility for forest research and operations carried out by the Canadian Forestry Service.

Reforestation trials started in 1971 were continued with the planting of 1,000 jack pine styroplugs in the Fort Smith area. Growth and survival measurements were made on stock planted in 1973.

Work was completed on the location of fire detector and communication sites designed to protect the Mackenzie Corridor. An air drop demonstration of fire retardant was given. Liaison and services in fire were maintained and included training seminars for fire look-outs, aerial observers, photo-interpretation for fire managers, use of the fire weather index and back-firing techniques.

An appraisal was carried out on deterioration of trees in the vicinity of Pine Point throughout the south shore of Great Slave Lake. Causes and effect relationships were studied.

Work was completed on reporting results of the Mackenzie Valley Terrain Sensitivity Project. A chairman was provided for DOE Task Force examining potential environmental impact of proposed pipeline.

Forest Management Institute

"Biophysical Mapping of the Arctic Archipelago" — The following report was issued. "Terrain classification and evaluation, Eastern Melville Island, Northwest Territories". Vol. I, 747 p., Vol. II, 671 p., three maps and two detailed legends. Geological Survey of Canada. Open File 252.

Base maps were compiled, aerial photographs and ERTS imagery, and a brief field reconnaissance was carried out over a 2,000 square mile area. This is in preparation for an integrated evaluation of land, vegetation and water resources.

"Vegetation Survey of the Mackenzie Transportation Corridor" — In a Forest Management Institute study, funded by the Environmental-Social Committee, Northern Pipelines, a vegetation survey of the area south of the Mackenzie Delta in the Mackenzie Transportation Corridor was completed. A report, entitled "Vegetation types of the Mackenzie Corridor" and consisting of two parts, text and maps, was published in March 1974. The report and maps of a vegetation survey of Old Crow and Arctic Coast, Yukon, and Mackenzie Delta, Northwest Territories have been completed.

"Information Report FMR-X-71, "Forest Resources of the Mackenzie River Valley" — Forest Management Institute, Canadian Forestry Service — Data and forest mapping accumulated during several previous studies

in the Mackenzie Valley, Northwest Territories, were consolidated in a separate report describing the extent of the forest resource in the area.

Plans for 1975-76

Pacific Forest Research Centre

Beginning in 1975 at the Pacific Forest Research Centre in cooperation with the Yukon Lands and Forest Service, will initiate a program directed towards: (a) defining reforestation needs; (b) assisting in the development of seed acquisition strategies program; (c) elucidate reforestation techniques and assist in testing out promising approaches; and (d) training Yukon Lands and Forest Service staff in container seedling nursery and stock handling technology. During 1975, on-site inspections are being promoted of current logging operations and logged-over lands.

A biophysical inventory scheme at a scale of 1:1,000,000 will be initiated. Broad vegetational physiographic climatic zones and major watersheds will be delineated using ERTS imagery and existing topographic maps. Field reconnaissance will be conducted to establish unit boundaries. Existing small-scale vegetation maps will be updated to incorporate any harvesting operations in areas burned since 1968. Summaries of timber volumes in areas will be developed in metric (SI) units and the map area and volume information will be entered into an information retrieval system for easy access and updating.

The PFRC fire research program for the Yukon will mainly provide advisory services on request. Definitely committed services include the provision of lecture for the fire control course; advisory role in the development of fuel management contracts; development and procurement of aerial ignition devices and provision of training capability if required, and advisory services related to the calibration, use or application of the Canadian Forest Fire Behaviour Rating System, either by Yukon Lands and Forest Service in-house or contract resources.

Economic advice and services will be provided as needed with particular reference to benefits and costs associated with forestry development, reforestation alternatives and nursery establishment.

Routine forest insect and disease survey work will continue.

In the longer term, the Forest Insect and Disease Survey will continue in the Yukon and there will be a strong emphasis on the participation in biophysical surveys. It is proposed that biophysical mapping at a scale of 1:250,000 be undertaken in cooperation with DIAND. Units suitable for broad scale planning and management will be delineated which would form the framework for resource surveys, inventories of wood volume and growth, insect and disease surveys, and silvicultural research and environmental assessment studies.

The PFRC will respond to the Yukon's needs on a priority basis for (a) fire behaviour studies including aspects for ignition, frontal development and impact including meteorological and ecological interactions, and (b) fuel management programs for the development of prescribed fire expertise and wildfire management policies. Also, a work-study plan for an economic analysis of forest fire prevention and suppression will be developed.

Northern Forest Research Centre

Remeasurements will be made related to reforestation trials. Studies will initiate on landform, vegetation and permafrost relationships related to GSC terrestrial environment project in the Arctic islands. Regular liaison and service programs will be continued.

Forest Management Institute

South Nahanni National Park: Eastern half — Plans are underway to stratify the park area and delineate land-vegetation units on available aerial photographs and ERTS imagery. Field work will be conducted to collect ground data on soils, plant communities, forest cover types and water resources. Data will be processed and land-vegetation maps, scale 1:50,000 will be compiled. Preparation will be made for further 1976-77 field work.

CANADIAN WILDLIFE SERVICE

Responsibilities

- To conduct research, management and administration of migratory birds under the Migratory Birds Convention Act and the Canada Wildlife Act.
- To co-ordinate federal, provincial and territorial action on common wildlife problems.

- To conduct surveys and inventories of wildlife resources.
- To recommend management procedures for particular species of economic or aesthetic importance.
- To undertake or to sponsor research on wildlife species in relation to their habitat.
- To collect and analyse animal population and utilization data.
- To study wildlife diseases and the effects of toxic chemicals on wildlife or their habitat.

Review of 1974-1975

Work undertaken in the North in 1974 included investigations of big game species of the Yukon and Northwest Territories, of the wildlife and wildlife habitat on potential energy corridors in the Western and High Arctic, of the biota of areas subject to the increased tempo of petroleum exploration, of the wildlife of the new northern national parks, and of the endangered raptors and the recreationally and aesthetically valuable waterfowl resources, principally of geese. In addition, increased attention was paid to our advisory role to DIAND through the staffing of positions in Yellowknife and Whitehorse, for the purpose of providing regular wildlife input to the deliberations of Territorial Water Boards, the Arctic Land Use Advisory Committees and the Arctic Waters Oil and Gas Committee.

Increasing petroleum exploration activity on the important Arctic Migratory Bird Sanctuaries which are administered by the Service necessitated also the staffing of a position for an Enforcement Co-ordinator at Inuvik.

Mammalogy Projects

Completion reports were prepared on the beaver and muskrat of the Mackenzie Delta, on the Dall sheep of the Mackenzie and Richardson Mountains, and on the wildlife habitats of the Mackenzie pipeline corridor.

Polar bear research continued with the emphasis on identifying the ranges of discrete sub-populations. Studies also involved documenting major denning sites and the relationship between bears and their major food supply, the seal.

Polar bear research in the High and Eastern Arctic continued with emphasis on mapping denning areas and determining numbers, distribution, movements and productivity of bears. Data was gathered in the High Arctic, James Bay, Ungava Bay and Foxe Basin.

Studies of distribution numbers and productivity of musk oxen and Peary caribou were continued on Bathurst, Melville, Prince Patrick and adjacent smaller islands, and animals were captured and marked to ascertain their movements. Studies of foods habits of musk oxen, Peary caribou and arctic hares on the Queen Elizabeth Islands were continued with field work on Axel Heiberg Island. Studies were conducted on Bathurst and eastern Melville Island to determine the most efficient methods of extensive inventory of forage stands.

Reports on the effects of forest fires on barren-ground caribou in northern Manitoba, Saskatchewan and southeastern Mackenzie District were being prepared.

Mapping of polar bear denning areas and determination of numbers, distribution, movements, and productivity of polar bears continued in the High Arctic, James Bay, Ungava Bay and Davis Strait.

The field aspects of the study of distribution, numbers productivity and movements of musk oxen and Peary caribou on the western Queen Elizabeth Islands were completed. Inter-island movements of caribou were documented. A widespread die-off in both species occurred, apparently as a result of deep and prolonged snow cover with ground-fast ice.

Studies of food habits of musk oxen, caribou and arctic hares and techniques of extensive mapping of habitats for Arctic herbivores have continued with field work on Melville and Axel Heiberg islands.

Environmental Studies Projects

Field investigations were carried out on polar bear, grizzly bear and seal population relationships, migratory bird use of coastal waters in the western Arctic and on Mills Lake and Beaver Lake along the upper Mackenzie River; the movements of the Porcupine Herd of barren-ground caribou and endangered raptor breeding sites.

An ecological evaluation of new national parks in the Northwest Territories and Yukon Territory was continued in 1974 in connection with the Parks Branch of the Department of Indian Affairs and Northern Development. The largest input in 1974 was on the Kluane National Park and the Nahanni National Park.

Ornithology Projects

An atlas of the distribution of birds at sea in arctic waters was completed and a census

of the marine birds using the Beaufort Sea was conducted from April through October.

A project to map the flora and fauna of the Beaufort Sea coastal tundra was begun.

Studies of the biology and distribution of brant, white-fronted geese, glaucous gulls, gannets and whistling swans continued.

Whooping crane nesting surveys continued and eggs were again collected for incubation at the Patuxent Research Centre.

A census of lesser snow geese nesting around Hudson Bay, on Southampton Island and on western Baffin Island was completed and submitted for publication. The census, giving total nesting pairs, total nesting area, and colour ratio for each of the 16 colonies, was based on vertical aerial photographs obtained in June 1973.

Contracted studies on the nesting biology, behaviour, and genetics of Lesser Snow Geese continued at LaPerouse Bay, near Churchill, Manitoba.

Investigations of the distribution of sea ducks, brant, and snow geese, including banding of the latter two species, continued in the Queen Elizabeth Island.

A spring reconnaissance survey of shorebirds was made in the vicinity of Alert on Ellesmere Island.

Several oceanographic surveys of seabirds were made off west Greenland and in the eastern Canadian Arctic. Population analysis from photography was continued for several major eastern Arctic seabird colonies. An atlas showing the breeding and pelagic distributions of seabirds in eastern Canada and west Greenland was completed and submitted for publication.

Plans for 1975-1976

Mammalogy Projects

The studies of distribution, numbers, productivity and movements of Peary caribou and musk oxen on the western Queen Elizabeth Islands will continue. Studies of food habits will continue with summer work on Somerset and Prince of Wales Islands, and Boothia Peninsula, as a part of an Arctic Islands Pipeline study.

Polar bear studies will continue in both the western and eastern Arctic areas with special attention to relationships between polar bears and those species of seals that are their principal food.

The study of the Bluenose herd of barren-ground caribou distribution, numbers, and productivity, which is found in the country between Great Bear Lake and the coast, will continue. Further west,

studies of barren-ground grizzly bears, commenced as an adjunct to Mackenzie Valley pipeline corridor studies, will be continued in the northern Yukon and adjacent NWT.

Ornithology Projects

The census of seabird colonies will be extended to Lancaster Sound.

Radar studies of migrating birds in the Beaufort Sea will be done in May and June. Ground and aircraft observations will check the radar observations.

Work on the population biology of the brant and whistling swans will be intensified.

Studies of the distribution of shorebirds and the factors affecting them will continue.

Flora and fauna mapping (1:50,000) of the western Arctic tundra will be completed.

An intensive five-year banding program for white-fronted geese, Ross geese, brant and mallard ducks will begin.

Investigations of the nesting habitat requirements of whooping cranes will begin and surplus crane eggs will be shipped to Gray Lake, Idaho. The whooping crane eggs will be incubated under greater sandhill cranes in an attempt to establish a new population with different wintering grounds.

Studies on the distribution and habitat preferences of snow geese, Canada geese and brant will be conducted in the Foxe Basin and Southampton Island area.

Contracted studies on lesser snow geese will include continuation of the investigations of nesting biology, behaviour and genetics at La Perouse Bay and initiation of a study of egg size variation and energy reserves at McConnell River.

The classification of bird habitats made by the recent Integrated Landscape Survey on eastern Melville Island will be checked by studies of nesting birds at selected areas.

Investigations of snow geese and brant by means of a banding program (including neck-banding of brant) will be expanded on Melville, Bathurst, and other Arctic islands.

Reconnaissance and banding of shorebirds in spring on northern Ellesmere Island will continue.

A multi-species study of the reproductive ecology of seabirds breeding on Prince Leopold Island will be initiated. Additional investigations of seabirds will be conducted on Devon, and Baffin Islands and in northern Ungava.

Environmental Studies

The ecological evaluation of new national parks in the Northwest Territories and Yukon will be continued in conjunction

with the National and Historic Parks Branch, Indian Affairs and Northern Development.

Important wildlife species likely to be affected by the Mackenzie Highway will be studied in 1975. Waterfowl and wetland habitat, moose movements and migrations, and the distribution and behaviour of peregrine falcons near the areas of construction activity will receive greatest emphasis.

Seabird colonies and their food sources will be studied in the Strathcona Sound area of Baffin Island in connection with a mining development here.

Long-term Plans

To continue studies of major wildlife resources.

To increase studies of impact on wildlife and its habitat of development of natural resources, transportation corridors and new and existing industrial processes.

To develop management plans for important northern species of wildlife, such as caribou.

To increase efforts to identify and preserve natural ecosystems.

To assess the effects of increasing human use, both consumptive and non-consumptive, on wildlife resources and their habitats.

NATURAL WATERS DIRECTORATE

Water Resources Branch

Hydrology Research Division

Responsibilities

To conduct federal research programs in hydrology with emphasis on the development of hydrologic techniques, methodologies and instrumentation for water resource evaluation; to identify those operational areas in the water resource field where there are needs for research and to implement appropriate research projects and programs to meet these needs; to develop and improve hydrologic models and to establish firm objective criteria for assessment of their reliability; and to gain a better understanding of hydrologic processes and interactions in order to place hydrologic modelling on a more deterministic basis.

Review of 1974-75

Groundwater investigations of the Mackenzie Valley and Northern Yukon continued in 1974. A total of 18 maps of spring and icing occurrences in the main

pipeline and highway corridors were prepared during the year and released to open file. The potential use of ERTS-1 (Satellite) imagery for monitoring of icing development and dissipation was investigated for rivers in the Beaufort Sea drainage.

Development of groundwater instrumentation for use under northern conditions resulted in a number of designs for electrical-resistance frost gauges (to monitor progress of freezing and thawing) which are being subjected to comparison tests. A system for measuring and recording pore pressures in freezing and subsequently thawing saturated soil, using electrical pressure transducers, has been developed and is undergoing testing.

Plans for 1975-76

Detailed hydrogeological, hydro-geochemical and isotope studies will be made at a few selected groundwater discharge areas. One or two selected man-induced occurrences and their consequences in terms of available water resources, influence on the environment and interaction with engineering development will be investigated. A multi-channel system for the measurement and recording of groundwater parameters will be developed.

Long-term Plans

A continuing commitment to investigation of northern hydrologic and hydro-geologic problems is envisaged. Two important specific aims are:

- to gain an improved understanding of the factors controlling the occurrence and movement of groundwater in permafrost areas and the interaction between groundwater and permafrost, and
- to be able to predict the potential modification of groundwater occurrence and movement by resource development activities, as well as the possible undesirable environmental consequences thereof.

Glaciology Division

Responsibilities

To establish a federal research centre to provide leadership in the study of glaciology; to develop new concepts on the hydrologic processes in the North; to study the structure and physical properties of snow and ice and their relationships with the environment and to develop computerized data storage and retrieval systems pertaining

to glaciers for federal, provincial and territorial water resources agencies, educational institutions and industrial concerns.

Review of 1974-75

Work on the glacier inventory continued, both by staff in Ottawa-Hull and through contract with the Arctic Institute of North America; the latter group concentrating on the St. Elias Range, YT. The Glacier Atlas sheets covering Baffin Island (24 sheets), Bylat Island (one sheet), Devon Island (nine sheets) and Axel Heiberg Island (five sheets) have been printed. The first two maps from Ellesmere Island are printed and others are in an advanced stage of preparation.

A radio echo sounding survey was carried out on the South Dome of the Barnes Ice Cap and a line of stakes was surveyed in the same area to determine the flow regime of the surge area.

A reconnaissance survey to locate a drill site for a future deep drilling project to obtain an ice core was carried on Mount Logan. This work was combined with a survey operation during which it was determined that the actual height of Mount Logan is 5,950 m (19,520 ft) i.e., about 100 m (330 ft) lower than that shown on current maps.

Hydrological investigations along the glacier margin in south-central Ellesmere Island were carried out under contract with Department of Geography, McMaster University. Emphasis was on the regime of two major rivers, on discharge variations from ice dammed lakes and on sediment yield from nival and glacier streams.

Hydrological studies continued in the Mackenzie Valley with emphasis on problems relating to highway and pipeline construction. Ice regime of major rivers and culvert design considerations was given particular attention, but lake and ground temperatures were also measured at selected sites.

Microwave techniques were used to obtain ice thickness information from the Beaufort Sea under the Beaufort Sea Program and ERTS imagery was used to study ice drift in the channels between the Arctic islands.

A team departed from the Arctic Ocean to participate in the Arctic Ice Dynamics Joint Experiment (AIDJEX), the main phase of which started in March 1975. The team will carry out remote sensing studies using microwave and radar techniques.

Airphoto coverage from selected sites along the Mackenzie River and on the Arctic

islands were obtained for scientific purposes in a joint operation with Polar Continental Shelf Project.

Plans for 1975-76

Most of the studies carried out in 1974-75 will be continued; some in a modified form. For example, the Barnes Ice Cap studies will be limited to investigations of flow regime and temperature distribution; radio echosoundings will be made near a tentative drill site on Mount Logan.

New activities include hydrologic studies on Somerset Island in connection with the Arctic Island Pipeline Program and studies of the chemical composition of snow-melt water near d'Iberville Fiord, Ellesmere Island. A calving glacier in the same fiord will be mapped on the rate of iceberg production assessed.

Long-term Plans

To improve our understanding of the behaviour of large ice masses; to obtain long ice cores from large glaciers and analyze these as a means of obtaining data on environmental change; to complete a map series of all calving glaciers with estimates of the rate of ice discharge from each; to develop a project that focuses on the hydrologic regime of basins in environments characterized by permafrost, low temperatures and extensive periods of snow cover. Special attention will be given to the hydrologic implications of resource development.

Applied Hydrology Division

Responsibilities

The Main responsibility of the Applied Hydrology Division is to provide technical support for the operation of the Water Survey of Canada and includes the following functions:

- Development of techniques, instrumentation and standards for the collection of streamflow, water level and sediment data;
- Development of techniques, instrumentation and standards, including computer programming, for office procedures in handling the data and publication of the resultant records;
- Conduct of Network Planning and Flow Forecasting studies;
- Conduct of special purpose or nonroutine field surveys including discharge measurements of large rivers, survey of sediment

deposition in reservoirs, photogrammetric surveys of glaciers and morphological studies of river basins and estuaries;

- The operation of a sediment analysis laboratory for both production and experimental purposes.

Review of 1974-75

The annual publication of stream discharges and lake levels in the Yukon Territory and NWT for the year ending December 31, 1973 was distributed in October, 1974. The information is also available on magnetic tape for computer use. An index of all streamflow and water level stations in Canada was published. A publication of historical streamflow data was distributed in March 1975 and includes a summary of monthly and annual mean discharges, annual maximum instantaneous discharges and maximum and minimum daily discharges for the entire period of record to 1973. A publication was produced in August 1973 listing records of daily sediments loads for 1969 in many streams across Canada including some in the Territories.

In the Network Planning and Flow Forecasting field, a publication was distributed giving hydrometeorological-physiographic characteristics relating to rain/snow floods for selected basins in Canada including basins in the Territories. This was part of Canada's contribution to a UNESCO World Catalogue on Large Floods. Also a relationship was drawn up between flood characteristics and basin characteristics, to assess the accuracy of flood data estimation in ungauged areas.

Three Data Collection Platforms (DCPs) which transmit water levels and a variety of other data, such as temperature and recorder performance, to the LANDSAT 2 polar-orbiting satellite, have been operating with very high reliability since July 1972. The three sites are:

Mackenzie River near Wrigley
Mackenzie River at Sans Sault Rapids
Kasan River at Outlet of Ennadai Lake

Plans for 1975-76

An analysis of low flows, similar to that done for flood flows for the UNESCO catalogue, will be conducted and will include some streams in the Territories.

Additional satellite Data Collection Platforms (DCPs) will be installed and operated by Water Survey of Canada personnel in 1975. Studies for a Canadian Satellite System that would meet DOE requirements

are now being conducted by Department of Communications.

In general Applied Hydrology will have reduced its activities by approximately 10 per cent compared to 1974-75.

Long-term Plans

To continue experimentation and studies to further enhance the effectiveness of the Water Survey of Canada.

Water Survey of Canada

Responsibilities

The Water Survey of Canada (WSC) is primarily responsible for the collection, computation, and publication of surface water data, including sediment data, for most of Canada. The WSC works in cooperation with provincial governments and other departments of the federal government. In addition to operating a network of hydro-metric gauging stations, the WSC cooperates with other sections of the Inland Waters Directorate in the collection of water samples for quality analysis and the operation of observation wells for groundwater studies. It also constructs, operates, and maintains water level recording stations to provide information on tides and water levels for the Marine Sciences Directorate. The WSC operates laboratories for suspended sediment and bedload samples.

Review of 1974-75

Seventy-seven hydrometric gauging stations were operated in the Northwest Territories and 41 in the Yukon Territory; tidal water levels were recorded at an additional 15 stations. Sediment observation were made at 19 sites in the Northwest Territories and four sites in the Yukon Territories. Snow surveys were made for the thirteenth year at 11 locations to assist in the prediction of snowmelt runoff in the Taltson River basin where hydro-electric power is generated.

In cooperation with the Frozen Sea Research Group, a program was continued to collect surface water data from d'Iberville Fiord area of Ellesmere Island.

The WSC constructed 16 new gauging stations to obtain flow and sediment data, nine either on tributaries to the Liard-Mackenzie drainage or for the Mackenzie Delta study; seven in various stream basins in the Yukon.

The data acquisition program associated with the Mackenzie Corridor studies was

ased out or integrated into long-term
ongoing programs.

The forecasting network and frequency
forecasts for main stem Mackenzie River
els was improved. Data communications
are also improved through use of
ANDSAT satellite retransmission and
telephone linkage.

A program to determine the distribution
of flow and sediment in the Mackenzie Delta
is expanded as part of the Beaufort Sea
udies.

Plans for 1975-76

Through an exchange of letters between
Ministers for the Departments of En-
vironment and Indian Affairs and Northern
Development a Cooperative Program has
been established for planning and sharing the
cost of water quantity surveys in the
Territories. The WSC will carry out the field
activities. Under this arrangement the exist-
ing level of program will be continued and
eight additional streamflow stations
constructed in the NWT and three in the YT.
Hydrologic Regime investigations will be
sited along the proposed route of the
Arctic Island Pipeline.

The tidal gauge network and water level
forecasting program will be continued.

Long-term Plans

Development plans for water quantity
and related networks in the Territories has
been prepared in cooperation with the
Department of Indian Affairs and Northern
Development. It is anticipated this program
will improve the level of information base
needed for future resource development and
water resource inventory. The development
plan will be implemented under the terms of
the Cooperative Programs for Water Quanti-
ty Surveys. The WSC through arrangements
with the Ocean and Aquatic Affairs
Directorate and other sections of the Inland
Waters Directorate, will continue to operate
tidal gauges and collect samples for water
quality analysis.

Water Quality Branch

Responsibilities

The Water Quality Branch is responsible
for the collection, analysis, interpretation
and dissemination of water quality data in
support of federal and federal-provincial
programs across Canada. Baseline water
quality data is obtained from specific

reference points across Canada and is aug-
mented by detailed information and data
collection in comprehensive surveys that are
undertaken in response to specific water use
requirements or environmental impact
assessments.

Review of 1974-75

The Branch provides direct support for
federal programs relating to national park
and to data collection and surveys in the
Yukon and Northwest Territories in collabo-
ration with the Department of Indian and
Northern Affairs. A collaborative arrange-
ment for laboratory services is in place at
Yellowknife in which the Branch partici-
pates directly in the analysis of samples
collected in the Territories under the Depart-
ment of Indian and Northern Affairs
program. This Branch activity is adminis-
tered as a detachment of the Inland Waters
Directorate laboratory at Calgary in the
Western and Northern Region

Long-term Plans

The Branch will cooperate in joint basin
studies with the Department of Indian and
Northern Affairs and with other water-
oriented services in the Department of the
Environment. These studies should produce
specific water quality objectives from which
effluent standards can be derived.

Water Planning and Management Branch

Responsibilities

- To develop comprehensive water resource
studies and water management programs.
- To provide an advisory service to the
Governments of the Northwest Territories
and the Yukon on Water Planning and
Management matters.
- To participate in environmental
assessments of development projects, in
particular the water management aspects.

Review of 1974-75

The Branch participated in the review of
water management aspects of projects which
come under the Environmental Assessment
and Review Process (EARP). Most work in
this area was carried out in connection with
the proposed Mackenzie Valley Pipeline, the
proposed Polar Gas Pipeline and several road
construction, hydro-electric and mining
development projects in the North. The
Branch provided the Secretariat for the
Mackenzie Basin Intergovernmental Liaison

Committee and its Task Force on Informa-
tion. The Liaison Committee, which also has
representation from British Columbia,
Alberta and Saskatchewan, functions as a
vehicle for data exchange and identifies
deficiencies in present and anticipated data
needs.

Plans for 1975-76

The Branch will continue to participate in
the review of projects which come under
EARP. A Mackenzie River Basin Study,
under the Canada Water Act, is expected to
be developed under the auspices of the
Mackenzie Basin Intergovernmental Liaison
Committee.

Long-term Plans

The Branch will continue to participate in
EARP; cooperate in the development of
water management programs; take part in
river basin planning under consultative
committees (Canada Water Act); carry out
impact studies as a result of diversions of
water, and; work towards the establishment
of a more formal management arrangement
for the Mackenzie Basin's water, such as
would be provided by a Basin Board.

ENVIRONMENTAL PROTECTION SERVICE

Responsibilities

- To take action in preventing or combating
environmental problems which fall within
Environment Canada's terms of reference.
These responsibilities include problem
surveillance, pollution control in water
and air, solid waste management, control
and disposal of environmental contami-
nants, assists in control of activities having
an ecological impact, noise control,
response to environmental emergencies,
and management of the federal govern-
ment's own cleanup program.
- To develop and enforce environmental
protection regulations, codes, protocols
and other protection and control instru-
ments used to implement governmental
legislation.
- To serve as the point of contact for the
public and other government departments
with Environment Canada on matters
relating to the implementation of environ-
mental protection measures. With regard
to the North, the points of contact are
located at headquarters in the Ottawa area
and the established district offices in

Whitehorse and Yellowknife reporting through the regional offices located in Vancouver and Edmonton respectively.

Air Pollution Control

Responsibilities

Responsibilities under the Clean Air Act are to control air pollution from federal works, businesses, and undertakings in the Northwest Territories and the Yukon; controlling air pollution that may be a significant danger to health; and exercising a leadership role in the national effort to abate air pollution.

Review of 1974-75

Investigations of the air pollution aspects of a number of activities in the North continued. These activities included gold smelting operations in Yellowknife; proposed off-shore oil and gas drilling; waste disposal by incineration; a proposed mining operation at Little Cornwallis Island and a proposed mining operation and power plant at Strathcona Sound, Baffin Island.

An extensive carbon monoxide survey was conducted in Whitehorse as a follow-up to a preliminary study carried out the previous winter. The purpose of the expanded survey was to determine the extent to which carbon monoxide concentrations build up under the influence of weather conditions that reduce the diluting capability of the atmosphere. Upon completion of the special survey, a carbon monoxide analyser will be retained in a downtown Whitehorse location as part of the National Air Pollution Surveillance Network to monitor year-round ambient levels.

Surveys were conducted at Yellowknife, NWT, to determine the concentration of arsenic in the environment. In conjunction with this study further work was done on the development of an X-ray fluorescent method for the analysis of arsenic compounds on high volume sampler filters. Technical services were provided for the testing and evaluation of a prototype sewage sludge incinerator installed at Fort Simpson. Advice was also provided on the air pollution aspects of compressor stations along the Mackenzie Valley pipeline.

Data from northern installations was included in a national inventory of five potentially hazardous pollutants; zinc, cadmium, arsenic, manganese and fluorides. Work was continued on the development of emission regulations for Arctic mining operations and on the development of a National

Emission Standard for Asbestos mining and milling which will affect asbestos operations in the Yukon.

Plans for 1975-76

Work will be continued on the projects outlined above particularly with regard to assessment of the potential air pollution problems from arsenic in Yellowknife. Under development is a National Emission Guideline Regulation for non-ferrous smelters which will affect gold smelter operations in Yellowknife. Several natural gas processing plants are planned for the North. These projects will be assessed and monitored to ensure that adequate air pollution control measures are included.

Long-term Plans

Long-term plans for the North include the assessment of air pollution aspects of selected activities, an expansion of the National Air Pollution Surveillance Network as required, the continued development of national emission guidelines and regulations (which will be applicable in the North) and, in general, to take action in accordance with the intent of the Clean Air Act.

Federal Activities Environmental Control

Responsibilities

- To develop a program in consultation with other federal departments, Crown corporations and the territorial governments for the clean-up of pollution from federal activities and installations, assess environmental problems and recommend annual government-wide priorities to Treasury Board for allocation of clean-up funds to other departments.
- To provide technical service and advice to the other departments and on request, to the governments of the Yukon and the Northwest Territories, and to ensure implementation of remedial measures for environmental problems due to federal government activities and installations.
- To ensure that all proposed new federal activities and installations incorporate and maintain adequate provision for environmental protection by developing and instituting systems for assessing and screening projects for potential adverse environmental effects.
- To conduct monitoring and surveillance of on-going operations. These include installed environmental protection

systems and established practices at federal installations. Also included are studies of the environmental effects of federal or federally-involved projects.

- To co-ordinate the activities of separate missions in assessing the environmental effects of specific resource exploitation and other activities which may have adverse effects on the environment.
- To assist and cooperate in the assessment of environmental effects of the activities of industry and to recommend and implement control actions where appropriate.
- To maintain communications with all elements of government and industry to develop codes and guidelines for good practice and, as necessary, regulations.

Review of 1974-75

Substantial progress was achieved in the program for environmental clean-up of pollution from federal activities and installations by establishing and recommending to Treasury Board priorities for allocation of clean-up funds for several northern locations. These included assessment studies and design and construction projects.

Co-ordination and assistance were provided to other government departments in identifying the predictable environmental consequences; development and implementation of controls where necessary; and surveillance and monitoring activities relating to various projects. Particular emphasis was placed on the review and assessment of the new federal projects and activities. Continued monitoring and surveillance of existing environmental control facilities.

A brief environmental assessment on the remaining portions of the Dempster Highway in the Yukon and Northwest Territories was completed.

Assisted in the development of environmental impact statement requirements for the proposed realignment and paving of the Haines Road and Alaska Highway from Haines Junction to Beaver Creek.

Continued providing advice to the Arctic Land Use Advisory Committee and the Arctic Waters Oil and Gas Advisory Committee.

Provided technical advice on solid waste disposal site relocations to the Government of the Yukon Territory for two communities and to the cities of Whitehorse and Dawson.

participated in the development of Guidelines for Environmental Assessments of proposed Hydro Electric developments.

participated in the development of DOE requirements for information for mining developments.

assisted in an intensive examination of the toxic implications of drilling mud components, resulting in the development of a set of guidelines for the industry in the North.

participated in the evaluation of physical-chemical and rotating biological contactor wastewater treatment systems as well as incineration of boiler wastes.

Plans for 1975-76

Activities will be continued and intensified relative to the clean-up and prevention of pollution from federal activities and installations. At the same time the monitoring and surveillance of existing facilities will continue.

It is also intended to expand the screening and registry of all new federal activities and facilities development to ensure that adequate environmental safeguards are "built" into new installations.

Work will continue in the determination and development of the most suitable waste treatment systems and methods for northern conditions so that these may be applied at federal installations in the continuing effort to minimize or prevent pollution from such installations.

Ecological protection requirements for "federal" projects in the North will be assessed and surveillance and monitoring requirements established and implemented in cooperation with other government departments and industry.

Assistance will also be provided to other government departments in the review of proponents' assessments and the development of ecological protection requirements for developmental projects and activities such as roads, pipelines, airports, hydro projects and surface mining activities. Development of regulations, guidelines and codes of good practice will proceed as needs are identified.

Provide advice to the Arctic Land Use Advisory Committee and the Arctic Waters Oil and Gas Advisory Committee. Develop the capability to address the non-human environmental aspects of a national energy program.

Long-term Plans

Long-term plans are to establish the Federal Government in a position of leadership in environmental protection by ensuring that all northern federal activities and installations are provided with adequate waste treatment facilities and operated in a manner to exemplify this role, and that they meet all necessary standards, guidelines and codes of good practice.

Efforts will be continued to solve the unique environmental problems in the North where there is a federal involvement with special emphasis being directed towards applying new technology to reduce environmental degradation as much as possible.

Participation in environmental appraisal activities as necessary to fulfil Environmental Protection Service's responsibilities will be continued. Ensure compliance with standards recommended for the protection of the environment. Continue appraisal of the environmental consequences of any developmental activity in the North. Surveillance and monitoring of various developmental activities in northern Canada.

Appraisal, development and implementation of guidelines, control requirements and surveillance and monitoring of developmental projects and activities particularly for northern areas. Continue to develop the capability to address the non-human environmental aspects of a national energy program.

Water Pollution Control

Responsibilities

- To co-ordinate EPS programs with the Department of Indian Affairs and Northern Development and two Territorial Water Boards, and ensure the implementation of adequate water pollution control programs in the North, as might be required to meet the objectives of the Canada Water Act and the Fisheries Act.
- To implement water pollution abatement programs, including those covered by national effluent regulations.
- To stimulate the development and application of water pollution control technology as it relates to the special problems of the North.

Review of 1974-75

Considerable time and effort was devoted by EPS on the NWT Water Board in

organizing the review and consolidation of recommendations from the various DOE Services on water use applications.

All mine locations were visited, usually in concert with DINA staff and bioassay samples taken.

Officials of EPS participated in a review of desirable "Water Quality Objectives" for the North.

Membership on the Arctic Waters Oil and Gas Advisory Committee involved a review of several off-shore drilling proposals.

An aquatic survey of Yellowknife Bay for heavy metal contamination in the sediments and fauna was completed.

Continued representation on the Yukon Territory Water Board.

Development of Water Use Licences for Anvil, United Keno Hill and Clinton Creek mines was carried out.

Baseline aquatic studies in the waters around Anvil, United Keno Hill and Clinton Creek mines commenced.

Special investigations on asbestos fibre concentrations in the waters in the area of Clinton Creek asbestos mine and a study on the sub-lethal effects of asbestos on fish commenced.

Development of guidelines for water use licence requirements for Yukon communities.

Plans for 1975-76

Aquatic studies at the three active mines in the Territory plus baseline aquatic studies at two proposed mine locations.

Aquatic studies in the Yukon River at Whitehorse and Dawson

Continued representation on the Yukon Territory Water Board.

Several baseline biological surveys at pending gold mining sites with DINA Water Management personnel will be conducted.

Review of municipal water applications (i.e. City of Yellowknife and Strathcona Sound) will continue.

Long-term Plans

Future plans include the investigation of all waste treatment facilities under construction, completion of the investigation of mines in the Yukon Territory and the beginning of regular monitoring of effluents. Further basin studies on the sources of pollution are being considered, with priority being given to the Great Slave Lake area.

Technology Development

Review of 1974-75

The Northern Technology Development Program was conducted by the regions under Headquarters direction, with the assistance of other Services within EPS included the following projects:

Combined garbage and sewage incineration studies of simulated northern wastes.

Instrumentation of buried pipelines in permafrost areas.

Freeze-thaw sludge dewatering employing natural conditions.

Vacuum sewage collection state of the art study.

Laboratory study of concentrated waste disposal in northern areas.

Modelling of a rotating biological reactor.

Studies on the virus removal efficiency of selected wastewater treatment systems.

Plans for 1975-76

A Northern Technology Centre under the direction of the Technology Development Branch will be created in Edmonton. The new Centre will carry on the various projects previously undertaken by the Northwest Region of the Environmental Protection Service and direct the national northern technology program of the Water Pollution Control Directorate.

Long-term Plans

With the increase of industrial activity in the North, particularly with respect to energy and resource development, it is planned to accelerate the Arctic Wastewater Technology Development Program. Projects examining wastewater treatment processes are being considered for industrial sites and off-shore locations, as well as population centres.

Environmental Emergencies

Responsibilities

- To integrate contingency planning.
- To co-ordinate the development of environmental emergency technology.
- To co-ordinate when required, a federal response for assistance resulting from environmental accidents.

- To investigate, where necessary, and initiate clean-up procedures for environmental accidents.

Review of 1974-75

- Reported 41 significant events involving spills of petroleum products, ore concentrates and miscellaneous chemicals. Twenty spills were investigated on site and appropriate clean-up measures were carried out when necessary.
- Chaired the Environmental Protection Sub-committee on the Yukon Disaster Committee.
- Commenced preliminary work on the development of a Yukon Contingency Plan for the clean-up of hazardous substance spills.

Plan for 1975-76

To continue investigation of environmental emergencies. To develop or initiate development of new methods of clean-up material spills. To continue to work with the Yukon Disaster Committee. Complete the Yukon Contingency Plan.

Long-term Plans

Long-term plans include the development of a national contingency plan which can be integrated for mutual advantage. It will also include development of technology and training programs, as well as computer systems for support of environmental emergency operations and analysis.

PLANNING AND FINANCE SERVICE

The Planning and Finance Service provides a variety of support facilities for the line Services of Environment Canada, including information, computing services and personnel. The responsibilities of three of its directorates however have some direct relevance to the North and a brief report on each follows.

Liaison and Co-ordination Directorate

Responsibilities

This Directorate co-ordinates environmental and natural resource activities of an inter-service nature in negotiations or conferences involving other departments of the Federal Government, provincial governments, governments of other countries, and international organizations. For other departments, governments and agencies, it serves as a central point of contact within the Department of the Environment at the program and policy level, and provides the

contact point to facilitate the conduct of new or ongoing activities. It collaborates with other services of Environment Canada to assist in formulating broad policy.

The Directorate's activities are generally national or international in scope, but there are specific responsibilities related to the North, particularly that of co-ordinating representation from Environment Canada to ACND and its various sub-committees. There are also northern aspects to a number of environmental issues raised in bilateral and international discussions, including activities which involve the United States.

One example of the Directorate's activities is given in this report. As part of the Canadian response to the UNESCO Man and the Biosphere Program, one of four sub-programs which will be undertaken deals with the question of technological change and industrial development in the Arctic, sub-Arctic and other isolated regions and the consequential impact on social and cultural patterns, environmental quality and wildlife productivity. This is a co-ordinated and integrated interdisciplinary research program designed to examine specific problems with a view to identifying potential public policy alternatives. The Secretariat for the Canadian MAB program is centred in the Liaison & Coordination Directorate.

Office of Science Advisor

Responsibilities:

- To provide advice on the science policies and the effectiveness of scientific activities of the Department.
- To study the need for and application of scientific and technical information, as it related to the environment and the use of renewable resources, in the industrial and social activities of Canadians.
- To explore and develop new techniques for obtaining and relating scientific knowledge of the environment and its effect on human activities.
- To indicate the possible consequences of natural and/or man-caused changes and influences in the Canadian and world environment, and their potential effects on resources use, prosperity, and way of life.
- To communicate and co-ordinate information on the environment and resource use, and to relate such information to the programs and responsibilities of the Department.

Review of 1974-75

In 1974, the Office of Science Advisor undertook the following activities with specific northern or arctic content:

- On behalf of Canada, in the fields of atmospheric science, hydrology, marine and aquatic biology, oceanography, and ecosystems studies for the Canada-USSR General Exchanges Agreements Memorandum on Cooperation in Arctic Science; took part in the discussion and negotiations with USSR authorities on these themes;
- Coordinated the contribution, on environmental matters, for discussion through the advisory Committee on Northern Development, with the United States Interagency Arctic Research Coordinating Committee;
- Coordinated the federal environmental interests in activities of the Committee on Science and Technology of the Advisory Committee on Northern Development, in particular with regard to the development of guidelines for northern research and the evaluation of need for, and support of, a bibliography of arctic information;
- Contributed to the co-ordination of activities between the Mackenzie Valley Pipeline Enquiry and the Department of the Environment.
- Contributed to the information on the effects of energy activities on the environment of northern Canada, as part of the analysis of energy policies for Canada.

Plans for 1975-76

- Preparation of an identified plan for northern science thrusts in environmental studies.
- Continued co-ordination and analysis of science and technology programs related to the environment in northern Canada and the polar regions.

Long-term Plans

- The long-term plans of the Planning and Finance Service are to fulfil the above responsibilities as they pertain to departmental undertakings in the North.

DEPARTMENT OF EXTERNAL AFFAIRS (EA)

The Department of External Affairs is concerned with activities in the North conducted on behalf of or in cooperation with foreign governments or their agencies. A member of the Advisory Committee on Northern Development (ACND), the Subcommittee on Northern Transportation and other sub-bodies, the Department provides advice on matters having foreign policy implications, maintains a co-ordination and operational role in matters of international law and policy relating to the Arctic, and has responsibility for the negotiation of agreements with other countries arising out of activities or proposed activities in the North.

There is no single division within the Department of External Affairs charged with control of operations relating to the Arctic; rather a number of different divisions handle different aspects of the situation.

The *Scientific Relations and Environmental Problems Division (ECS)* seeks to co-ordinate Canadian policy on scientific activities of foreign governments or their agencies in the Canadian Arctic and provides advice to the ACND Subcommittee on Science and Technology on the international policy aspects of conferences, exchanges and research agreements. Recent activities include conclusion of an agreement with Denmark relating to provision of ERTS/LANDSAT data of Greenland; facilitation of joint project "TORDO" with the USA concerning upper atmosphere studies in the vicinity of the north magnetic pole; and arrangements for Arctic-related international conferences, such as the XIX Congress of the International Association of Limnology.

The *Transport, Communications and Energy Division (ECT)* co-ordinates departmental responsibilities in a wide variety of areas including the international policy

aspects of Arctic shipping, US-Canada co-operation in international Arctic highway construction and maintenance, co-ordination of information-gathering on worldwide Arctic transportation technology, and the international aspects of the northern energy-development projects. Recent areas of activity include continuing negotiation of an agreement with the United States on the upgrading and upkeep of the Alaska Highway as well as negotiations toward an agreement on the operation of pipelines carrying hydrocarbons of one country crossing the territory of the other.

The *Commercial Policy Division (ECL)* follows closely foreign economic interests in the North. Of particular interest are potential investments in and extraction of northern minerals by foreign interests, and the compatibility of such projects with our domestic and foreign policy objectives.

The *Bureau of Legal Affairs (FLP)* is responsible for international legal aspects of the Arctic. The list of subjects encompassed by this responsibility ranges from the protection of Arctic sovereignty, a responsibility shared with other sections of External Affairs as well as the Departments of National Defence and Environment, to the conservation of animals common only to arctic countries, for example the negotiation and ratification in 1974-75 of a convention for the protection of polar bears. The Bureau is also responsible for the application of existing international law to the Arctic. For example, an agreement with Denmark relating to the delimitation of the continental shelf between Greenland and Canada is based on the 1958 Continental Shelf Convention produced by the First Law of the Sea Conference. Since the passage of the Arctic Waters Pollution Prevention Act in

1970, the Bureau has made sure that action taken at the international level to prevent ocean pollution was not inconsistent with the 1970 Canadian legislation.

In 1974-75, Legal Bureau concentrated its efforts on the Third United Nations Law of the Sea Conference which is intended to achieve an internationally recognized legal regime for the world's oceans. The Canadian delegation placed considerable effort on achieving international recognition by the Conference for the special rights and responsibilities of coastal states with respect to setting standards for the prevention of pollution from ships in ice infested waters such as in the Arctic.

The Department of External Affairs also deals with exchanges of scientists, senior foreign editors or other media personnel and foreign government officials who wish to tour the Arctic; this process is facilitated with the aim of encouraging the expansion, among the foreign public, of knowledge of Canadian Arctic developments, and of inducing an interchange of ideas on methods of dealing with problems peculiar to arctic areas all over the world. Abroad, the posts maintained by the Department of External Affairs attempt to facilitate the travel and edification of Canadians wishing officially or privately to examine governmental and non-governmental practices in northern areas of foreign nations; the missions also gather information on such topics for the use of various government departments and agencies in Ottawa. Responsible offices in this area include the *Northwestern European Division (GEC)* which covers the Nordic nations, the *United States of America Division (GWU)*, and the *Eastern European Division (GEA)* which handles the General Exchanges Agreement with the USSR.

Among the events during 1974-75 were the visit of two senior officials of the Department of Indian and Northern Affairs, and Canadian participation in a Nordic archaeological expedition studying an important new group of Norse sites in Greenland. The Viking connection with Canada was marked in June (in the presence of the Prime Minister) by the opening of the L'Anse aux Meadows National Historic Park in Newfoundland, locale of the first Norse landing in North America.

In the social and cultural field, a Canadian artist was given governmental support for a project to carve the heads of a number of Greenlandic indigenous people, and an official of the Department of Indian and Northern Affairs began production of a film portraying the life-styles of the Samian (Lapp) peoples of Scandinavia.

The *Division of Cultural Affairs (FAC)* has also been responsible recently for the worldwide exhibition of travelling collections of Canadian art, including four collections of Eskimo prints which have been shown at prestigious galleries in Denmark, Norway, Belgium, Cuba, Jamaica, Trinidad, Yugoslavia, Mexico, France, China and Japan, en route this year to many additional centres in South America, the Pacific, and Europe.

The *Information Division (FAI)* is sponsoring showings in Europe and the USA of a new and major exhibit on the North which demonstrates the proximity of North and South, the similarities of environment and the perils of technological impact of that ecologically vulnerable region. The exhibit focuses attention on the peoples of five major arctic regions: Alaska, Canada, Greenland, Scandinavia and the USSR. First shown in the Netherlands, this exhibit entitled "Circumpolar" will tour England, Denmark, Norway, Sweden, Finland and the USSR during the later half of 1975 and the first months of 1976.

The Visits and Speakers Section of FAI has sponsored during 1974 and 1975 visits to the North of prominent foreign journalists and opinion-formers from Germany, the United Kingdom, Poland, the USA, South Africa, and Korea. More visits are planned for the coming year in order to acquaint interested personalities from other countries with the Canadian Arctic region and the modern day problems it must face.

The Division's Creative Services has also prepared numerous articles and photo-stories for Canadian Embassy publications in the USA, the United Kingdom, The Netherlands,

France and India. Articles on the North have also appeared in the Department's publication *Canada Weekly — Hebdomadaire Canada*.

The Division continues to distribute governmental as well as non-governmental publications on the North to all our embassies abroad and to purchase for presentation to distinguished persons abroad suitable books and examples of northern handicrafts, such as Eskimo prints and carvings.

The Department of External Affairs will continue to maintain its interest and activities in the international aspects of private and governmental activities in the North.

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT (DIAND)

INDIAN AFFAIRS PROGRAM

YUKON TERRITORY

Responsibilities

The Yukon has headquarters in Whitehorse with a regional director responsible to Ottawa for all programs. These programs are as follows:

- Community Affairs
- Education (employment and relocation, adult education and vocational training)
- Economic Development

Community Affairs Branch

Responsibilities

To administer sections of the Indian Act that have general application to all Indians and in particular those sections that apply to Indian reserves. There are six Indian reserves in the Yukon Territory although only two of them at Carcross and Teslin are occupied. The applicable sections of the Indian Act that are generally administered in the Territory are those referring to membership, band councils, management of Indian monies, estates and other related matters.

Review of 1974-75

Social Services

Three Field Officers and a social worker stationed in the Regional Office administer the social assistance program for all status Indian people, except for members of Whitehorse and Liard River Bands. In these cases, the Department has a contract with the two Bands providing for the transfer of monies to be administered by the Bands.

During 1974-75, the Regional Supervisor of Social Services conducted administrative reviews of the program with special emphasis

on closer co-ordination with other programs and resources and on improving support services.

The Yukon Department of Health, Welfare and Rehabilitation has responsibility for the child care program. All direct costs, plus an administrative cost of \$10,000 are charged to the Community Affairs Branch. The Department reviewed its non-ward care program in relation to the Territorial ward and social assistance programs and has reduced its involvement from about forty to two cases.

In its review of the adult care program, emphasis has been on maximum community involvement in the care of elderly people and upon using institutions as a last resource.

There was a significant increase in the use of rehabilitation services, particularly those relating to alcoholism treatment. In cooperation with Territorial authorities and an outside consultant we began a survey which will hopefully lead to the establishment of sheltered workshop facilities in the Yukon.

Community Improvement

Community Improvement participates in two types of housing programs for registered Indians:

the Off-Reserve Housing Program which assists status Indians who are gainfully employed to move into established communities; and the Subsidy Housing program where the Branch constructs homes on lands set aside for Indians.

The main program in 1974 was the Subsidy Housing Program with 28 homes being constructed and 99 housing units undergoing repairs.

New Band Halls were constructed for the Old Crow and Carcross Bands and the Teslin Band Office was completely renovated. The

labour portion of the repair program was financed by the Department's capital funds and the Work Opportunity Program. The Local Initiative Program helped in funding small community projects such as out-door rinks, garages, log cutting and some minor housing repairs.

New washhouses, providing shower and laundry facilities, were constructed for the Ross River Band and major renovations were made to the Carmacks, Selkirk and Teslin Band washhouses. The following major electrification projects were carried out: extension of the power line by one half-mile at Carmacks to supply power to four existing houses; and re-wiring and upgrading of existing facilities to forty houses at Old Crow.

Band Management

The Contributions to Bands Program, enlarged administrative training grants in 1972-73, encompassed a greater number of Department programs in 1973-74 to a value of \$1,148,000. This includes capital construction of housing and Band Office facilities as well as operations and maintenance funding of existing village facilities.

Training seminars were held in early spring and late fall so that in consultation with individual Bands, training priorities could be established for this Region. Bands indicated they felt that financial training was the primary priority in all areas and this was done at the village level in cooperation with the Regional Band Financial Advisor.

To provide adequate administrative facilities for the Region, Band Offices were constructed at Carcross, Burwash Landing and Old Crow, and the Teslin Indian Band building was modified. During the past two years, this program has provided office

buildings for all bands in the Yukon. The Liard Band office was destroyed by fire in late 1974 and will be replaced in 1975.

The recreation program contribution was increased for each band in 1974-75 to \$10 per member. Expansion of recreational facilities and the added interest of the Bands in the program, has allowed many individuals, young and old, to participate in summer and winter programs.

Plans for 1975-76

Social Services

Efforts to improve the quality of social services will continue. A series of workshops will be conducted to assist welfare administrators in providing counselling services and co-ordinating with other programs designed to get employable persons off public assistance.

Concerning child welfare, rehabilitation and related services, emphasis will be on promoting awareness in native communities of possible solutions to continuing problems and on increasing native participation.

Community Improvement

Twenty-nine new homes will be constructed through the Subsidy Housing program. Major renovations and repair will also be carried out on Indian homes as well as on the Band Hall in Carmacks. New Band Halls will be constructed in Teslin and Champagne/Aishihik.

One and one-half miles of new roads should be built during the summer of 1975.

Land, for lots, is being purchased in Dawson for the construction of homes for the Dawson Indian Band.

Land and Management

The expansion of Core Funding in 1974-75 will enable the village Band administrations to establish a firm basis for local autonomy.

Particular emphasis will be placed on instituting the General Terms and Conditions of the Local Government Program. This will be emphasized with training sessions to be held at the Band level as well as a general information meeting to be held in Whitehorse in early May.

To provide additional recreational facilities, the construction of community halls will be made at Teslin and Haines Junction during the coming year.

Education Branch

Though the Yukon Government Department of Education is responsible for the

education program for all school age children in the Territory, the Department of Indian and Eskimo Affairs is involved in post-school, adult education and vocational training programs. The Department is also involved in providing a variety of related services for the Indian population.

Responsibilities

The Department assists the Yukon Government Department of Education in matters related to Indian student enrolment in both elementary and secondary schools. The Department operates Yukon Hall in Whitehorse as a residence for students who would not be able to receive a secondary education in their home community.

Boarding home care is arranged for students without access to regular school services and for students whose parents or guardians are migratory for at least a third of the year.

The Department also provides financial assistance to students attending university, vocational schools or other institutions where such assistance is not available from the Yukon Territorial Government. The financial assistance covers purchases of books and supplies, tuition fees, approved school activities, monthly allowance and transportation and clothing expenses.

Students are given assistance in finding part-time and summer employment through various agencies and the Opportunity for Youth Program.

In cooperation with Manpower, employment and relocation services are provided to assess the skills of the Indian Labour force, recommend training programs and assist in obtaining employment. The Department maintains contacts with Manpower, vocational training institutions, the Yukon Native Brotherhood and other interested agencies to develop and improve training programs.

Counselling and information services are also provided to the Indian population in connection with the Off-Reserve Housing Program.

Review of 1974-75

In co-operation with Canada Manpower, the "Outreach" Program was instituted to promote the utilization of Manpower programs such as training on the job and LEAP. The Yukon Outreach Committee provided services to eight Yukon communities during the year with a staff of 13 workers. A group home was built at Upper Liard for students attending school at Watson Lake.

A cultural/education centre was established at Whitehorse with Departmental funding to provide a focal point for cultural education and to develop programs which emphasize native relevancy over the educational process.

The Department also appointed an Education Liaison Officer, with headquarters at Whitehorse, to provide education liaison services with the Territorial Government, the Yukon Native Brotherhood and the Indian population of the Territory.

Plans for 1975-76

In accordance with the Departments' policies, encouragement and support for parental participation in school and advisory committees will continue. Also encouraged will be the development of expanded kindergarten programs and the provision of counselling and orientation to students who leave their home communities to continue their education. By the fall of 1975, three group homes will be in operation to provide living accommodation for those students whose parents leave the community to trap during the winter months. A Social Counsellor will be hired to work with students at attending school in Whitehorse.

There will be employment opportunities for students during the summer so that they may develop self-reliance, and good mental-, physical-, emotional- and social-health. Students will be encouraged to discuss their problems freely in order to discover appropriate solutions.

In cooperation with Canada Manpower, the Department will continue to institute the "Outreach Program" in Yukon communities, and will promote the utilization of Manpower programs.

Economic Development Branch

Responsibilities

In cooperation with the Indian people, other government agencies, private firms, organizations and individuals, to plan, organize and initiate a comprehensive economic development program to include logging, sawmilling, big game outfitting, handicrafts, trapping, fishing, commercial and industrial development, and to stimulate a steady growth of self-reliance and economic independence.

Review of 1974-75

Fishing

Fishing by Indians continues to be primarily for home consumption with commercial fishing playing a very small role.

Big Game Outfitting

Teslin Outfitters Ltd., an Indian owned and operated company, is continuing to provide a high level of service to its customers.

Many Indians are obtaining seasonal employment in this field and have considerable experience in the operation of these ventures.

Handicraft

The Yukon Indian Arts and Crafts Society was founded in 1974 and has commenced the development of a comprehensive program intended to provide the financial assistance and training required to create a viable arts and crafts industry in the Yukon, with emphasis on increased production and marketing.

An experimental hide collection program conducted by the Department, the Yukon Indian Arts and Crafts Society and the Government of the Yukon Territory Game Branch resulted in an increased supply of raw materials for the producers.

Forestry

Three logging and two sawmilling operations are currently operated by Indians. The depressed market for building materials during 1974 prevented any significant expansion in this area.

Trapping

Expanding markets and continuing high prices resulted in a successful year for trappers. The Yukon Trappers' Association, with financial assistance from the Department, is playing a leading role in encouraging increased fur production in the Yukon. The efforts of this association in marketing furs has resulted in a higher percentage of sale value being returned to the trapper. A successful training course in fur preparation was held in Whitehorse in early 1974.

Industrial and Commercial

During 1974, Indian-owned retail outlets opened in Ross River, Pelly Crossing and Whitehorse. Expansion plans are well advanced for the first two of these stores. The people in the remote settlement of Old Crow have made significant gains in providing their own goods and services.

Indian Economic Development Fund

During 1974-75, approval was given to four loans totalling \$32,500, five contributions totalling \$65,000 and two bank loan guarantees totalling \$100,000 for a total of

\$197,500. Most of this money was used to sustain or expand existing businesses and for feasibility studies on proposed ventures.

Business Services

The economic development staff has been increased to four people in response to the growing need for financial, technical and managerial assistance to Indian businessmen.

Plans for 1975-76

Fishing

Low commercial limits on Yukon Lakes will continue to restrict fishing to a minor role in the Indian economy.

Handicraft

The Yukon Indian Arts and Crafts Society will continue its efforts to develop and implement a viable arts and crafts program.

Forestry

The present depressed market for forestry products will probably prevent any further expansion in this area in 1975.

Trapping

The Yukon Trappers' Association will continue to provide marketing services and other assistance to trappers. The introduction of humane traps will require considerable training and financial assistance to enable Indian trappers to successfully adjust to the change.

Industrial and Commercial

Encouragement is being given to Indian performance of various programs operating in the village such as house construction and fuel wood supply. This will result in a greater part of government expenditures going to Indian people.

Indian Economic Development Fund

Increased utilization of guaranteed bank loans and outside financing is resulting in a decline in direct lending from the fund. An increased demand for grants and contributions from the fund for equity, managerial assistance and feasibility studies is expected.

Business Services

Increased emphasis is being placed on the provision of managerial assistance to the Indian businessman. Improved financial controls and increased consultation with qualified business advisors are required in the initial stages of operation.

Long-term Plans

To promote and assist the development of economic enterprises, including small businesses; to provide the supervision, managerial and training support required to establish a firm foundation for eventual economic independence; to improve the business relationship between financial institutions and the prospective Indian businessman, by establishing equity through the provision of grants, infrastructure and managerial assistance.

NORTHWEST TERRITORIES

Responsibilities

- To assist the registered Indian people of the Northwest Territories in social, economic and community development, in close consultation and collaboration with the Government of the Northwest Territories and individual Indian bands.
- To assist the Indian people of the Northwest Territories to optimize their participation in educational and cultural development programs.
- To assist the Indian people of the Northwest Territories with research of their Land Claim; and to establish an effective interchange of information and ideas related to Indian Affairs policies and programs.
- To establish a responsive and reliable system of consultation and awareness among all federal departments operating in the Northwest Territories regarding the needs, desires and aspirations of the Indian people, and the role that departments can play in assisting the Indian people in this regard.

Review of 1974-75

The Economic Development activity developed in 1973-74 has been maintained at a brisk pace. Through cooperative ventures with the Territorial Government administration, further support and assistance has been provided to the Indian people of the Northwest Territories.

A noted awareness has been shown at the Settlement and Band level of the availability of resources and support which can be placed at the disposal of Indian people.

Loans and grants processed during the year cover a variety of projects, running from a multi-thousand dollar cooperative venture to small loans in support of individual business concerns.

The Core Funding Program has been implemented and is being developed by the

Community Affairs Branch of the Regional Representative's office. It should be noted that this program is the first one being controlled and administered by the Indian Band Councils structure in the Northwest Territories.

Consultation with the Indian people, the chiefs, Band Councils and the Native Organizations has been maintained at a satisfactory level.

Financial assistance has been provided to the Indian Brotherhood of the Northwest Territories to support their efforts in the community development program being carried out by the Brotherhood. Assistance has also been provided to the Indian Brotherhood in the field of research of Indian Claims and Land Settlement.

Plans for 1975-76

Continued and increased support in all phases of programs now being carried out in the Northwest Territories.

Emphasis on Band Management Training will be maintained and, is hoped, increased. Special efforts are being considered in the field of Band Secretary Training, keeping in mind the requirement of the Core Funding Program and support to Chief and Band Council.

Long-term Plans

Within the context of legislative and delegated authority, to:

develop the potential and capabilities of Indian Band Councils and individuals for assuming increased responsibility in the administration and control of Band assets and resources;

assist the Indian people in gaining and retaining control of social and economic programs operated for their benefit as far as is legislatively and administratively possible;

assist the Indian people and their supporting organization in their efforts to foster an atmosphere of increased cultural and social self-awareness and pride in their heritage among the Indian people and increased recognition of their contributions to the Canadian community as a whole; and

encourage and initiate multi-lateral exchanges of opinion, information and advice concerning government programs with the Indian people to ensure that the interests of the people are fairly and accurately represented and safeguarded.

NORTHERN AFFAIRS PROGRAM

Northern Natural Resources and Environment Branch

Oil and Minerals Division

Oil and Gas

Responsibilities

The *Oil and Gas Land and Exploration Section* provides managerial services in respect of the Government's proprietary interest in oil and gas, and to this end is responsible for the conduct of sales of oil and gas rights, the issuance of permits and leases, the maintenance of a registry of oil and gas rights, the surveillance of royalty and other revenue functions directly resulting from oil and gas operations, the economic and geological appraisal of individual parcels and the evaluation of the oil and gas potential in Canada north of 60°. It assesses exploratory programs for suitability to meet obligations to explore, receives and maintains technical data from exploration programs, maintains a library of exploration reports, and processes the geoscience data to provide information on potential reserves and land values, and to assist engineers of the Oil and Gas Drilling and Conservation Section in the solution of drilling, well control and production and conservation problems.

The *Oil and Gas Drilling and Conservation Section* is responsible for Departmental activities directed to the control of drilling and production techniques to protect against blowouts, whether polluting or simply wasteful, to ensure that reservoir depletion is carried out to ensure the maximum economic recovery of oil and gas, and its proper sharing between the various producers, and to ensure that all underground fluids not produced are confined to the strata in which they are found. It is responsible to ensure that timely recovery enhancement programs are instituted, and that adequate gas and oil treatment plants are built in accordance with good engineering practices. It is responsible for the prevention of pollution directly attributable to drilling and production operations, and for the safe gathering, storing, and transmission within the Territories of oil and gas and by-products produced from Canada Lands in the Territories and adjacent offshore areas. It is responsible for the safe conduct in all respects of drilling and producing operations in the harsh environment of northern Canada, and for the co-ordination of activities with those agencies responsible for activities peripheral to the immediate drilling and production operations.

Review of 1974-75

Oil and Gas Exploration

Expenditures by industry on oil and gas exploration in the Yukon Territory and Northwest Territories exceeded \$250 million in 1974, approximately a 10 percent decrease over the previous year. Exploratory and development drilling decreased to \$170 million (down five per cent) while total geological and geophysical expenditures remained the same at approximately \$80 million.

Filing applications were received for permits on Victoria Island, Davis Strait area, and along the periphery of the polar ice. Applications for filing will be processed after the Canada Oil and Gas Land Regulations are amended and promulgated.

Permits and leases were surrendered or cancelled along the periphery of many basins on the mainland and arctic islands. Significant numbers of permits and leases were also surrendered along the Upper Mackenzie Valley Basin and southern Northwest Territories.

A total of 110 seismic crew months were reported, including 10 marine seismic programs in the Mackenzie Delta, Beaufort Sea, Lancaster Sound and the Baffin Bay — Davis Strait areas. Detailed seismic work was continued on land by Imperial Oil Enterprises, Gulf Oil Canada Limited, Shell Oil Canada and others along the Arctic Coastal Plain and in the Mackenzie Delta-Tuk areas. Three reflection seismic participation programs were continued in the Delta during the current season. In the arctic islands, major seismic programs were carried out by Elf Oil Canada on Banks and Prince Patrick Islands, while Panarctic Oils Ltd. and Sunoco Company, utilizing approximately six seismic crews, continued reflection seismic programs over most of the islands.

Drilling operations were concentrated in three areas: the Mackenzie Delta-Tuk areas, Peel Plateau and the arctic islands, specifically in the Sverdrup Basin. Imperial Oil and Sunoco drilled wells on man-made islands in the Beaufort Sea during the current year. One well, IOE Adgo F-28, recovered significant amounts of oil and gas. Offsetting wells will be drilled to test several prospective horizons which may contain hydrocarbons. Approvals in principle were given to proposals for drilling from floating vessels in offshore locations in the Beaufort Sea. The company is now proceeding with construction of the offshore drilling units. Two more drilling proposals are being evaluated by drilling engineers and by environmental management officials.

Gas discoveries were made in the Mackenzie Delta by Gulf at Parsons P-53 and O-27 and Ya Ya A-28; by Shell at Kumak J-06; oil by Shell at Niglintgak M-19, Kumak J-06, and Imperial, at Adgo F-28. In the arctic islands, gas was discovered at W. Hecla N-52, Drake Point D-68 and E-78, by Dome at Sutherland O-23; and oil by Panarctic at their Bent Horn N-72.

Large scale environmental and ecological studies were continued by Canadian Arctic Gas Pipeline Ltd. along the Mackenzie Delta corridor. The application to construct a pipeline was made in early 1974. Through the Polar Gas Project, Panarctic Oils Limited and others both continued feasibility studies on the gas pipelines from the arctic islands to the mainland. Two possible routes were investigated by Panarctic Oils Limited. Both would cross Barrow Strait, one to proceed south along the west side of Hudson Bay, and the other along the east side of Hudson Bay.

In 1975, marine seismic programs are proposed for the interland-island areas in the Arctic and in the Baffin and Davis Straits. A core drill program to be carried out by the Atlantic Geoscience Centre proposes to drill five to six core holes in the Baffin Bay. A three-year seismic program operated by Sunoco and costing over \$40 million will be carried out in the arctic islands. The program, utilizing four conventional seismic crews and a marine seismic vessel during the summer, will gather seismic data over all the arctic islands. A continuation of wildcat and development drilling in the Arctic by Panarctic Oils and wildcat and development drilling in the Delta by the major companies may maintain the same level of exploration activity in the two areas. Exploration activity will be minimal in the Yukon Territory and in areas south of Norman Wells. However, exploratory costs should maintain the same level as in 1974.

Oil and Gas Production

Norman Wells Oil Field, N.W.T.

The Norman Wells Oil Field, lying in the west central part of the NWT had 59 oil wells capable of production and 39 producing regularly. Gross field production during 1974 averaged 2,738 BOPD plus 4.88 MMcf/D of gas, for a yearly total of 999,349 bbls. of oil and 1,781 Bcf of gas. The water injection plant injected 414,841 bbls. of water during January, February, March and April of 1974, but did not inject for the rest of the year.

Pointed Mountain Gas Field, N.W.T.

Three gas wells, Pan Am Pointed Mountain K-45, P-53 and O-46 (in grid area 60-30-123-45) produced at a combined gross average rate of 87.7 MMcf/D plus 356.1 BWPD for a yearly total of 32,010 Bcf and 129,968 bbls. of water.

Beaver River Gas Field, Y.T.

The Beaver River Gas Field straddles the Yukon-B.C. border with one well, Pan Am

Beaver River YT G-01-60-10-124-15 in the Yukon portion of the field. Production taken from the Pan Am Beaver River YT G-01 well (Mississippian Pool) during 1974 was 3,567 MMcf/D for a total of 1,303 Bcf of gas. Under a royalty sharing agreement between the Government of B.C. and the Government of Canada, seven per cent of the production from the Nahanni Pool or 1.135 Bcf was assigned to the Yukon portion of the field for 1974.

**Table 1. Number of Permits and Leases, and Relevant Acreage
31 December 1974**

| Area | Permits | Acreage |
|---------------------|---------|-------------|
| N.W.T. mainland | 1,622 | 72,989,005 |
| Yukon mainland | 439 | 18,917,151 |
| Arctic islands | 4,959 | 240,264,733 |
| Arctic coast marine | 1,134 | 54,783,144 |
| Total | 8,154 | 386,954,033 |
| Area | Leases | Acreage |
| N.W.T. mainland | 624 | 3,710,788 |
| Yukon mainland | 93 | 427,854 |
| Arctic islands | Nil | Nil |
| Arctic coast marine | Nil | Nil |
| Total | 717 | 4,138,642 |
| Grand total | | 391,092,675 |

Table 2. Revenues Received, 1974

| Yukon Territory | Revenues |
|-----------------------|----------------|
| Permit Fees | Nil |
| Transfer Fees | \$ 75.00 |
| Lease Fees | 180.00 |
| Rentals | 409,060.00 |
| Forfeiture | Nil |
| Bonus | Nil |
| Royalties | 24,619.20 |
| Total | \$ 433,934.20 |
| Northwest Territories | Revenues |
| Licence Fees | \$ 3,625.00 |
| Permit Fees | 73,220.00 |
| Transfer Fees | 44,900.00 |
| Lease Fees | 4,140.00 |
| Rentals | 3,812,555.16 |
| Forfeiture | 47,550.09 |
| Bonus | Nil |
| Misc. | 2,865.00 |
| Royalties | 1,187,425 |
| Total | \$5,176,280.68 |
| Total for Territories | \$5,610,214.88 |

Mining Section

Responsibilities

The Mining Section which is composed of three units has the responsibility for the administration of the mineral rights in the Yukon and Northwest Territories from the acquisition of mining lands through to mineral production including safety in mines.

Lands Administration Unit is concerned with disposition of mining lands including recording of mineral claims, representation work performed on mineral claims, the issuance of mining leases and the issuance of prospecting permits, and coal exploration licences. There are four mining recording offices in the Yukon, one in the Northwest Territories and one located at Ottawa for the Eastern Arctic.

Engineering and Inspection Services Unit is responsible for all engineering and technical matters pertaining to developing and producing mining operations. This includes approval of plans and specifications of mining methods procedures, equipment, materials and products for the safe operation of mines. It also includes the inspection of mining operations to ensure compliance with safety regulations, the operation of mine rescue stations, mine rescue training and mine rescue and recovery operations as well as the monitoring of mining environment both underground, surface and in the adjoining mining townsites.

Exploration and Geological Service Unit provides a geological information and advisory service to those interested in mineral exploration in the Territories from resident geologist offices in Whitehorse and Yellowknife. These offices give assistance where requested to geologists and prospectors, prepare geological compilation maps and assist in prospectors' training programs. A small library contains assessment reports, technical books and mining publications for use by the public. New core libraries in Whitehorse, Yukon Territory and Yellowknife, Northwest Territories provide facilities for the preparation and study of core samples and preserve valuable core data for the mineral industry. The Exploration and Geological Service Unit also carries out geological evaluations on mining developments in the Territories where government assistance is solicited through such programs as the Prospectors' Assistance Program and the Northern Mineral Exploration Assistance Program.

Review of 1974-75

The year 1974 saw a substantial increase in value of mining production mainly owing to the increase in metal prices particularly for gold, silver and zinc. The combined preliminary value of production for the two territories increased from \$309,592,478 in 1973 to \$408,088,000 in 1974, an increase of 31.8 per cent.

Exploration activity in the North has increased substantially as a direct result of the higher prices on the world markets for base metals, gold and silver, uncertainties over British Columbian mineral legislation and improvements in the transportation network in the North.

Exploration activity ranged over a wide area, including Selwyn and Mackenzie Mountains (Summit Lake, Godlin Lake and Bonnet Plume Lake), Enadai Lake, Rankin Inlet, Baker Lake, northern Baffin Island, Dawson Range (Minto area) and Ellesmere Island. Claim staking in 1974 increased over 1973; 13,696 claims in the Yukon and 12,180 claims in the Northwest Territories were staked compared to 9,383 and 15,303 respectively in 1973.

YUKON

Mining Production

The preliminary value of mining production in the Yukon increased from \$150,667,311 in 1973 to \$185,495,522 in 1974, an increase of \$34,373,689 or 23 per cent. This production came from five mines; three underground and two open pit mines producing lead, zinc, copper, silver, asbestos and coal with lead-zinc accounting for 61 per cent of the total production. The Yukon was once again the leading lead producer in Canada for the third consecutive year.

United Keno Hill Mines Ltd. (Silver-Lead-Zinc-Cadmium) increased its milling rate from 256 tons a day in 1953 to 297 tons a day in 1974. Value of production increased mainly because of the increase in price of silver and zinc. Reserves totalled 84,500 tons (47.4 ounces of silver a ton; 5.8 per cent lead; 1.5 per cent zinc) plus 26,000 tons at 40 ounces silver a ton at December 31, 1933. Total work force throughout the year was 302.

Anvil Mining Corporation Ltd. operates a large lead-zinc open pit mine in the Ross River area 130 air miles northeast of Whitehorse. It is the largest producer in the Yukon with a work force of 422. Production increased from 7,942 tons a day in 1973 to

8,146 tons a day in 1974. Total tons milled amounted to 2,925,359 with reserves of 63,000,000 tons grading 9.1 per cent combined lead-zinc prior to production.

Cassiar Asbestos Corporation Ltd. operating an open pit asbestos mine at Clinton Creek, 50 miles northeast of Dawson City, produced at a rate of 5,314 tons a day for an increase of 476 tons a day over 1973. Total tons milled amounted to 1,457,237. The work force was 308 in 1974. As of December 31, 1973 ore reserves were 7,861,123 tons probable and 8,792,000 tons possible.

Whitehorse Copper Mines Ltd. which started production from underground in December 1972, produced at a rate of 1,800 tons a day in 1974. Total tons milled amounted to 626,541 with reserves as of December 31, 1973 for underground ore reported as 3,182,388 tons over 2.03 per cent copper.

Tantalus Butte Coal Co. operated by Anvil Mining Corporation Ltd. continued mining coal throughout the year at 70 tons a day with a work force of 20 employees. The coal is shipped to the Anvil Mine and is used for drying lead-zinc concentrates.

Mining Exploration

Mineral exploration activity in the Yukon in 1974 resulted in the expenditure of \$12 million. This reflects an increase in activity over 1973, as well as higher exploration costs in remote areas of the territory.

Main areas of interest during the year were the Minto area, the Anvil Range area, the Bonnet Plume River area and the Summit Lake — Howard's Pass area. There was also a moderate amount of activity in the Richardson Mountains and in the Ogilvie Mountains west of the Dempster Highway. There were 13,696 mineral claims recorded in the Yukon in 1974, an increase of 4,313 over 1973.

In the Minto area, several companies were actively exploring properties around the United Keno Exploration — Asarco-Silver Standard orebody estimated to contain in excess of 8 million tons of 1.8 per cent copper with minor gold and silver. Feasibility studies on the orebody are currently underway.

Kerr Addison Mines Ltd. and AEX Minerals Corp. carried out extensive drilling in the Anvil Range. At least four zones carrying ore grades were intersected at depths ranging from 200 to 1,500 feet. The ore occurs as

massive lenses of galena and sphalerite associated with pyrrhotite and pyrite in phyllite and graphitic schist.

Numerous companies continued exploration in the Bonnet Plume River area with several zinc deposits being discovered, principally as light-coloured, high-grade sphalerite mineralization in silicified breccia zones in thick-bedded, porous dolomite of Lower Cambrian age. The most significant deposit is the Barrier Reef deposit reported as containing one million tons grading 13 per cent.

Canex Placer Ltd. continued exploration on their Howard's Pass lead-zinc deposit. The mineralization is fine-grained, stratiform galena and sphalerite in a black, graptolitic shale of Lower Ordovician age.

Lead-zinc and silver-lead-zinc mineralization have been found in the Richardson and Ogilvie Mountains. Welcome North Mines investigated a sedimentary iron deposit west of Aklavik on the Yukon-Northwest Territories border.

NORTHWEST TERRITORIES

Mining Production

Production was achieved from six mines; two open pit and four underground operations producing lead, zinc, copper, gold, silver and tungsten. Lead-zinc accounted for 78 per cent of the total value of production. The Northwest Territories was again the second largest lead producer in Canada. Total preliminary value of production in the Northwest Territories was \$223,047,000 up 40 per cent over 1973.

Giant Yellowknife Mines Ltd. Tonnage and grade are both well below 1973. The open pit near the south end of the property, is now producing ore at the rate of 400 tons a day. This zone is reported to contain half a million tons of ore grading 0.3 oz/ton to a depth of 350 feet. Waste stripping began in March and ore was first produced in August.

A new wage contract was signed in September, calling for a 27 per cent increase. This may reduce labour turnover and improve the quality and quantity of underground miners. The shortage of experience stope miners has been responsible for a substantial reduction in underground ore production.

Con Mine of Cominco Ltd. Tonnage is down, but grade is up from 1973. Labour shortage and turnover are responsible for the reduction in tonnage. A recent substantial increase in wages may improve this situation.

The new Robertson shaft is at 2,400 feet. Target date for completion at 5,800 feet is early in 1976. At 1,600 feet the shaft intersected a quartz vein that contained some gold values. A station was cut at 2,300 feet to expedite the investigation of this zone.

Con mine won the Ryan Trophy from the C.I.M.M. for 1973, for the safest mine in the Prairie Provinces and NWT.

Pine Point Mines Ltd. Tonnage is up from last year, but grade is down, giving nearly the same production. Ore is coming from about nine pits, and the average hauling distance is increasing. This calls for more and larger equipment and a bigger crew. Women are being hired as heavy haulage equipment drivers to help solve manpower problems.

The M-40 orebody is being worked from underground. Plans are under way to increase the flow of ore from this and other deep orebodies. This will result in more equipment, more employees and an increase in the size of the townsite.

Echo Bay Mines Ltd. The mine has run out of ore. For the first 10 months of 1974, the mine averaged 90 tons a day grading over 100 ounces of silver a ton, giving a total of more than 2 million ounces. The mill closed in August. One stope is being mined above the adit level.

The company has moved its hoist back to the old Eldorado mine and are proceeding to dewater it to the 850 level. This will be followed by an exploration and development program to mine the silver in these workings. The water is contaminated with arsenic and radioactivity and must be treated chemically on surface.

Terra Mining and Exploration Ltd. Tonnage is up from 1973, but grade and silver production are down. Grade has been improving as the richer ore from the No. 10 vein gets into the mill.

The new veins are giving the mine some ore reserves for the first time since start-up. They are confident that they can trace them continuously from the fifth level to surface.

Some work was done on the adit at Norex, but little progress was made before freeze-up. No ore was encountered. Labour problems have hampered production, and management continuity has been a problem.

Cantung Mine of Canada Tungsten Mining Corporation Ltd. The open-pit was shut down permanently in the fall of 1973 and by May, the ore from the open pit had been completely milled. Underground ore is easier to mill, and of better grade, so there was no loss of production by switching to underground production.

Canadian Mine Services did the underground development work, which is now complete, on contract. The mine is in the process of taking over production. There are many mechanical problems yet to be solved, mainly due to slow delivery of machines and equipment.

A program of improvement and expansion to the townsite, plant and mill is in progress. Shortage of labour has hampered this effort, and the program is behind schedule.

Hope Bay Mines Ltd. Crews moved in during June, rehabilitated the mine and built a small mill. Mining proceeded on the high grade vein that was opened up last year. The mill operated at 14 tons a day during August and closed in September. A reported 65,000 oz. of silver was produced from 850 tons milled.

WT Property of Precambrian Shield Resources Ltd. Some 400 feet of underground exploration work was done during April and May on a gold showing about 40 miles northeast of Yellowknife. Diamond drilling continued until August. The work identified a mineralized zone containing 600 tons a vertical foot grading .16 ounces per ton gold.

Arvik Mines Ltd. Diamond drilling continued through the summer at the mine and some neighbouring areas. Economic feasibility studies are underway.

Camlaren Mine The Camlaren shaft on Gordon Lake was deepened from 380 feet to 840 feet during August and September. Drifting is continuing on the bottom level in the ore zone. Some gold values have been rumoured.

In the H Lake area, 25 miles southeast of the Bathurst Norsemines property, Conwes Exploration and Brascan Resources discovered a lead-zinc-copper-silver deposit in acid intermediate volcanics on the opposite limb of the syncline from the Bathurst Norsemines property. The zone is 600 feet long, 100 feet wide and open to depth with an indicated grade of three per cent zinc, 0.5 per cent lead, 0.5 per cent copper, three ounces of silver and 0.03 ounces of gold a ton.

Texasgulf continued work on its permit in the Takiyuak Lake area where a copper deposit was cut by five drill holes with an average intersection of 34 feet assaying 4.8 per cent copper, 1.3 ounces silver and 4.83 per cent zinc with minor lead and gold.

In the Arctic Red River area, several companies including Rio Tinto Canadian Exploration, Serem and Welcome North Mines have discovered long mineralized uni-

containing zinc and lead in Lower Palaeozoic formations.

In the Heninga Lake area, Gemex Minerals discovered a copper-zinc body. Six drill holes cut a 34.5 foot section assaying 2.91 per cent copper, 6.84 per cent zinc, 3.09 ounces silver a ton and minor lead.

Nanisivik Mines Ltd. Work has started on the mill foundation and a crew is on the property to start an 8,000 foot underground development program. The Federal Government has taken a minority share position in the company.

Silver Bay Mines Ltd. Northrim Mines Ltd. has a crew on the old Federated silver property on Camseil River. They are rehabilitating the mill and camp. Plans are to drive decline on the existing vein structure to provide 400 feet of backs below the silver ore which was mined two years ago.

Mining Exploration Eighteen million is estimated to have been spent in 1974 on mineral exploration in the Northwest Territories. These funds have been divided between the search for base metals, the search for uranium and the examination of gold and silver properties in the Territories. During the year, 12,180 claims were staked and 39 new prospecting permits were issued bringing the total claims in good standing to 9,000 and the number of prospecting permits in good standing to 67. The number of mineral claims staked in 1974 was a decrease of 3,123 over the number staked in 1973.

Exploration is widespread with activity occurring in almost every geographical area of the Territories. The areas of major interest are the Hackett River area, H. Lake area, Aklayuk Lake area, Arctic Red River area and the Heninga Lake area.

Cominco discovered a third ore zone, the Foot Lake Zone, on the lead-zinc-silver property of Bathurst Norsemine in the Hackett River area. Indications are that the zone is at least 600 feet long, up to 100 feet wide, extends down to at least 700 feet and contains several million tons of silver-zinc mineralization.

Water, Lands, Forests and Environment Branch

Land Administration

Responsibilities

Management of the disposal of surface rights to Crown lands in the Yukon and Northwest Territories, including allocations of lands for federal government programs, pursuant to the Territorial Lands Act and Territorial Lands Regulations.

Review of 1974-75

Fiscal year 1974-75 was an important year in almost every aspect of northern lands administration. Over 600 new land tenure agreements were executed between the Department and private and governmental users making it the largest single year on record in the modern era involving the grant of surface rights in land. This includes establishment of the first Indian Reserve in the Northwest Territories at Hay River.

Major policies were announced in January 1975 covering the disposition of territorial lands for cottage lots and agricultural purposes. The Department announced plans to develop cottage lot subdivisions in both

Territories for lease to the general public and to confine disposal of land for summer recreational purposes to these subdivision developments. There will be no sale of these lots and disposal will be limited to one lot per family unit domiciled at the same address. The main purpose of the new policy is to control haphazard development which was becoming a problem under the former policy whereby an applicant could build anywhere in the Territories in land if his own choosing. The new policy is also designed to conserve prime waterfront land for future generations and to reduce speculation in Crown lands.

Table 3. Comparison of Mineral Production 1973-74

| Northwest Territories | | 1973 | 1974 (000)* |
|-----------------------|--------|---------------|-------------|
| Gold | \$ | 24,262,894 | 27,634 |
| | Ounces | 249,075 | 177,000 |
| Silver | \$ | 13,691,789 | 19,621 |
| | Ounces | 5,420,344 | 4,252 |
| Copper | \$ | 1,106,319 | 1,190 |
| | Pounds | 1,734,178 | 1,528 |
| Lead | \$ | 32,261,787 | 37,977 |
| | Pounds | 199,887,160 | 183,464 |
| Zinc | \$ | 87,541,226 | 136,467 |
| | Pounds | 362,549,600 | 391,025 |
| Cadmium | \$ | 61,152 | 158 |
| | Pounds | 16,800 | 40 |
| TOTAL | | \$158,925,167 | \$223,047 |
| Yukon Territory | | 1973 | 1974 (000)* |
| Gold | \$ | 2,032,502 | 4,130 |
| | Ounces | 20,865 | 26 |
| Silver | \$ | 15,342,856 | 28,420 |
| | Ounces | 6,073,973 | 6,158 |
| Lead | \$ | 38,013,324 | 44,010 |
| | Pounds | 235,522,452 | 212,609 |
| Copper | \$ | 14,791,665 | 17,605 |
| | Pounds | 23,186,245 | 22,600 |
| Zinc | \$ | 61,167,027 | 68,576 |
| | Pounds | 253,321,575 | 183,344 |
| Cadmium | \$ | 45,718 | — |
| | Pounds | 12,560 | — |
| Asbestos | \$ | 13,915,140 | 22,300 |
| | Pounds | 100,734 | 90 |
| Nickel | \$ | 5,209,621 | — |
| | Pounds | 3,404,981 | — |
| Platinum | \$ | 149,458 | — |
| | Ounces | 1,314 | — |
| TOTAL | | \$150,667,311 | \$185,041 |

NOTE: All figures are on a calendar year basis, since Statistics Canada and mining companies from which we obtain our figures work on a calendar year basis.

*Preliminary value of production.

In recent years, the lands offices in both Territories have been besieged with applications for agricultural lands covering hundreds and thousands of acres. The disposition of lands of this magnitude has possible adverse effects on the physical characteristics of the land, on wildlife, and on socio-economic programs of the Federal and Territorial Governments, unless the dispositions are well-planned in advance. Because of the seriousness of the situation, the Minister of Indian Affairs and Northern Development reluctantly announced the suspension of dispositions of land for large-scale agriculture, pending the development of long-term policies for agriculture in the North. The new policies and disposal plans will be based on soil and climate surveys to be conducted in the Territories over the next two to three years. Smaller acreages for market gardening and vegetable gardens for home consumption are not affected by the suspension. It is intended to lift the suspension on certain categories and areas as soon as federal and Territorial planning and analysis allows.

The program of transferring blocks of land surrounding communities to the administration of the governments of the Yukon and Northwest Territories, which began in 1970, continued in 1974-75. To date seven block land-transfers have taken place in the Yukon and 15 in the Northwest Territories, encompassing a total of 1,507 square miles. This program is designed to enable the Territorial Governments to plan and control, in close cooperation with the local councils, the development and growth of the communities in their respective jurisdictions.

Plans for 1975-76

The first cottage subdivisions will be opened for lease to the general public at Marsh Lake and Tagish Lake in the Yukon in May and June, respectively; others at Teslin, Finlayson and Pine lakes will be opened later in the summer. Soil surveys in the Lower Liard River Valley Region in the Northwest Territories and climate surveys in selected areas of the Yukon and the NWT will be conducted in the summer (both the latter programs in support of the development of agricultural policy). Responsibility for the administration of the Whitehorse Land Titles Office will be transferred to the Yukon Territorial Government on April 1, 1975. The Yukon Land Use and Resources Inventory will be continued and selective land-use studies in the Mackenzie Delta will commence. Blocks of land encompassing communities will be transferred to the territorial

governments and a computerized lands records system will be assembled at the lands offices at Whitehorse, Yellowknife and Ottawa.

Long-term Plans

The long-term plan is to classify all territorial lands in accordance with their highest and best use and to prepare comprehensive plans for their development and use based on a multiple land-use concept, these plans to be supported by amended statutes, regulations, policies and procedures as needed. This is necessarily a long-range proposition because of the vastness of the area involved, therefore it is planned to undertake program selectivity each year toward fulfilment of the objective. At the same time, it is necessary to accommodate the land use requirements of current users of the lands. In the next two to three years, it is planned to open cottage subdivisions in both Territories for lease to the general public, to conduct soil and climate surveys in both Territories as the basis for new policies for the disposition of agricultural lands, to continue the program of transferring blocks of land in and around communities to the Territorial Governments, and to improve the efficiency of land administration service to the general public by introducing a computerized land records system and amendments to the Territorial Lands Regulations.

Arctic Land Use Research Program

Review of 1974-75

In 1974-75, land use information mapping coverage of the Yukon was completed with publication of the remaining 17 map sheets at 1:250,000 scale. Field work and literature reviews have been completed for 24 map sheets in the District of Mackenzie, NWT in a block from Gt. Bear Lake to Fort Smith. Cartography is well in hand and publication will be completed in 1975. This program is continuing in 1975-76 with an up-dating of the Mackenzie Valley maps and new mapping north of Great Bear Lake.

Photomosaics depicting terrain sensitivity, both in summer and winter, were prepared for Banks, Bathurst, Eglinton, southwest Ellesmere western Melville and Prince Patrick Islands. This project, too, will be continued in 1975-76 on the Queen Elizabeth Group and Amund Ringnes Island, the Grinnell Peninsula of Devon Island, Somerset and northern Prince of Wales Island and northwestern Victoria Island. Complementary field studies of terrain disturbance on the arctic islands are continuing.

The fire ecology studies already underway were continued. Work on fire effects on the tundra and northern taiga, centred on Inuvik was virtually completed and the study on fire frequency and relationships between weather conditions and fire incidence in the upper Mackenzie catchment of the NWT have been concluded. The Caribou Range study, a three to five year project, made good progress in its second year.

A study on the removal of arsenic from mine effluents was completed and work was continued on the toxicity of arsenic and of chemicals used in the gold milling process.

A two-volume summary of ecological literature about the arctic islands was published and is much in demand.

A preliminary archaeological survey and studies on waste disposal and land based spills, which were undertaken for the Environmental-Social Program, Northern Pipelines, were completed. However, the oil spill study will continue on a monitoring basis for a few years to investigate long-term effects.

Environmental assessment is an expanding area of work. The ALUR staff are playing an important role in evaluating the like effects of possible industrial developments the North and in devising methods for minimizing the ill-effects.

Preparation of a Land Use Handbook for the guidance of resource management field staff is well in hand and will be distributed in the near future.

Forest Management

Responsibilities

To manage the forests of the North using sound recognized forest management practices in conjunction with essential environmental restraints.

Review of 1974-75

The relatively high primary forest production maintained throughout the year in the Yukon and Northwest Territories compare favourably with the production level south of the 60th parallel, which suffered a serious setback due to a severe slump in home construction in the United States. In the Yukon Territory, most of the volume was produced by Yukon Forest Products at the new mill at Watson Lake, while the Indian Co-operative at Fort Resolution produced by far the largest share of the wood in the Northwest Territories. With the increased production capacity of the Watson Lake mill, the manufacture of spruce construction lumber in the Yukon Territory became sufficient to satisfy the demands of the local market.

In anticipation of a significant increase in logging and milling activities, the Department took the first steps toward establishing forest management units and estimating the potential production from such units. Classification of forest cover, through interpretation of aerial photographs in the Slave Forest Management Unit, NWT was completed and the first series of photo mosaics for the preparation of base maps was obtained. Interpretation of aerial photographs for the Nisutlin Unit commenced in January 1975.

Work continued on the review of Territorial Timber Regulations and a fifth draft was prepared in January, 1975 based on comments and suggestions supplied by legal and field personnel.

Plans for 1975-76

Plans include completing the revised Territorial Timber Regulations, increasing stumpage dues in line with the increased value of the end product, and introducing competitive bidding on timber cutting rights. Planning for the forest inventory will continue and forest cover maps for the Slave and Nisutlin Units will be used for preparation of sampling plans. A forest inventory system best applicable to field and summary procedures will be determined and methods will be designed to make efficient use of the existing computer services. Additional aerial photography of the lower Liard River watershed will be obtained to facilitate mapping of productive forest lands, determination of the annual allowable cut, and eventual establishment of substantial industrial development based on the region's timber resources. A start will be made on the interpretation of aerial photography of the La Biche and Hay Forest Management Units. A start will also be made on mapping some of the Yukon's natural resources at 1:1,000,000 scale, using RTS imagery.

Long-term Plans

Long-term plans include the formulation of a new Territorial Forest Policy expressing the changing requirements related to the management of an important natural resource. The Department will endeavour to obtain appropriate authority by seeking revision of the existing legislation, which would allow gradual decentralization and strengthening of administrative organizations in the Territories, including their forest management capabilities. It will enable the Lands and Forest Services to cope with the increased demands made on the timber

resources and at the same time permit the use of adequate environmental restrictions.

High priority will be given to the study of reforestation requirements of cutover areas to prevent deterioration of good, productive forest soils.

Forest Fire Management

Responsibilities

The aim of forest fire management is to protect life, property, important timber resource areas and essential game habitat areas from fire. This reduces forest fire damage to a level consistent with the present and future needs of the people and ensures the continuation of their enjoyment and use of the resources.

Review of 1974-75 Operations

Only 93 fires were detected throughout the Yukon Territory in 1974. The season was wetter than normal and only short periods of high to extreme fire danger were experienced. Heavy snowfalls occurred as early as mid-August. Action was taken on 74 of the 93 fires. The total acreage burned was 3,829 of which 31 per cent (1,189 acres) was in the protected area.

In the Northwest Territories, a similar weather pattern prevailed with the result that only 183 fires occurred. Most fires were small, but one burned 32,000 acres in the unprotected area in the Inuvik District. Throughout the season, 143 fires were fought and the total acreage burned was 91,720.

During the 1974 fire season, staff were selected to attend specialized fire control training in various locations in Canada and the United States. Fire control training courses were developed and presented by personnel of the Lands and Forest Service in both Territories.

Air tankers were contracted and used effectively throughout the Yukon and in the Mackenzie District of the NWT. Two Douglas A-26's were used for initial attack and support action in the Yukon. In the NWT a Douglas DC6-B, two A-26's and three Canso aircraft were used for the same purposes.

Fire prevention programs were conducted by officers of both the Yukon and Northwest Lands and Forest Services. School classroom visits helped to convey to children the importance of reducing fire occurrences. In addition, fuel management studies were initiated to develop methods of modifying forest fuels adjacent to communities which could become threatened by wildfire.

For the first time, smokejumpers were contracted for use in the Yukon to speed the initial attack on wildfires. Early indications reveal that this program is feasible despite the numerous technical implications involved in the efficient operation of the system.

In the NWT the fire weather network was increased from 19 to 32 stations. The Northwest Lands and Forest Service cooperated with other fire control organizations in times of need by releasing air tankers and a Sikorsky S55T helicopter. Assistance was provided to Ontario, Alberta and British Columbia.

Plans for 1975-76

Smokejumpers will again be contracted for use in the Yukon in 1975. A special paracargo aircraft capability will be introduced to increase the efficiency of the smokejumper program as well as the regular suppression crew operations. Communication systems will receive further study and development in both Territories. Training and fuel management programs will be expanded to achieve greater fire control efficiencies.

Long-term Plans

Plans include reviewing the Forest Protection Ordinances, Regulations and fire management policies for both Territories with a view to protecting northern residents, their interests and natural resources in the most beneficial manner possible.

Land Use Management

Responsibilities

Control of the use of unalienated Crown lands in the Yukon and Northwest Territories, and the protection of those lands from environmental damage as a result of use.

This is carried out under the Territorial Land Use Regulations, administered by a staff in the field and a policy and planning staff in Ottawa.

Review of 1974-75

During the fiscal year 1974-75 more than 300 land use permits were issued, covering large and small scale activities in the Yukon and Northwest Territories, within the definition of a land use operation (as set out in the regulations). In each case, the environmental impact was assessed and appropriate operating conditions were written into the permit after which the work on the land was monitored as required. About 80 per cent of the

land use operations were concerned with the search for oil and gas in the Mackenzie Valley and in parts of the arctic islands. Such activities included staging camps, well drilling and seismic surveys. Mining and other development activities held permits for diamond drilling and other geophysical work, such as road and trail construction. Construction of roads and highways was a significant activity under permit by government agencies.

Amendments to the Territorial Land Use Regulations were carried to the discussion stage with Territorial Councils and other agencies and promulgation scheduled for the fall of 1975.

The known granular material deposits on northern Crown lands were assessed, and policies for management of the resource have been under review.

Construction of the Mackenzie and Dempster highways has been monitored in respect to environmental concerns.

A cleanup program on certain Crown lands has been initiated with the removal of several hundred miles of downed telegraph line along the Carrol Road in the Yukon.

Plans for 1975-76

Activities on unalienated northern Crown lands will be monitored for environmental concerns and will include those operations on the Mackenzie and Dempster Highways. Cleanup on certain Crown lands in the Yukon and Northwest Territories will continue.

Water Management

Responsibilities

To conserve and manage the inland water resources of the Yukon and Northwest Territories and the arctic sea waters adjacent to the mainland and islands of the Canadian Arctic and to protect these waters from environmental damage resulting from use. The Section also controls the use of land and waters for hydropower developments on federal lands south of the 60th parallel. These responsibilities are carried out under the Northern Inland Waters Act, the Arctic Waters Pollution Prevention Act and the Dominion Water Power Act.

Review of 1975-76

During the year, the water management staff was active with the water licensing program under the Northern Inland Waters Act and Regulations. Over 200 authorizations to use water were issued and four water licences were granted.

Under the Dominion Water Power Act the staff collected water and land rentals for licensed hydro power developments in national parks and on Indian reserves as well as in the North. A total of eight developments are licensed under this Act.

The Section cooperated on various planning projects for new hydropower developments with the Northern Canada Power Commission. It also supported the activity of the YT and NWT Hydro Planning Coordinating Committee which was established to assist in planning and various tasks concerning water and land uses and environmental protection of the North. The Commission was granted a water licence for the construction of a power dam on the Snare River near Yellowknife in the NWT. Construction of this development, started in 1974, has been continuing.

For the benefit of the existing and future users of waters, new procedures are being finalized to enhance the planning, operation and reviewing of water quantity surveys in both Territories. A new proposed program on the principle of sharing of capital and operational costs will be effective starting April 1, 1975.

The Water Management staff provided advice on water matters pertaining to pipeline, highways, oil and mineral development and community supply and disposal systems. A report containing operating facts on hydro power developments licensed under the Dominion Water Power Act was published during the year.

Throughout the year, the Section carried out numerous studies of various aspects of water uses and water management policies. At the same time, the Section provided representation to many interdepartmental, federal, provincial, international and industry working groups designed to establish emission and effluent standards.

The Mackenzie Basin Intergovernmental Liaison Committee was set up as a forum for information exchange and to co-ordinate joint studies on water-related resources of the Mackenzie Basin.

Plans for 1975-76

Based on the experience gained, second amendments are proposed for the Northern Inland Waters Act and its Regulations. The Section has membership on a committee to establish water quality objectives for the Yukon and Northwest Territories. These are expected in late 1975. Offshore oil and gas activities are expected to increase the involvement of the Section in environmental

protection and surveillance activities. The Section plans to contribute to the development of new guidelines for oil/gas hazardous spills. Preparations are made to estimate the hydropower potentials within the Liard River Basin and the Bathurst Inlet Region.

Northern Policy and Planning Branch

Policy and Planning ACND Division

Responsibilities

The Policy and Planning ACND Division is the focal point for carrying out, in co-operation with the members of the ACND, medium and long range socio-economic planning for the North, including the development of policy alternatives for a medium and long range development strategy, regional planning in the North, the review of the effectiveness of current federal policies for the North and the development of the data base and statistical measures needed to support this activity. In addition, the Division is responsible for the co-ordination of pipeline related activities within the Department.

Review of 1974-75

Work conducted during this period included:

Preparation of material on economic conditions and structure of the Northern Territories and their various regions. A number of reports on demographic characteristics of the North are in the final stages of writing and will be published in 1975-76.

Support of the Federal-Territorial Economic Planning Committee of the ACND particularly with respect to that Committee's efforts to initiate a more comprehensive approach to regional development planning in the North.

Development, in cooperation with the Northwest Territories Government, of a Territorial employment record and information system; the Government of the NWT is responsible for the implementation and operation of the system.

Provision of data for manpower and resource development studies.

Compilation of a report to the ACND on federal and territorial government expenditures in or on behalf of the North covering the period of 1973-74, 1974-75 and 1975-76.

Processing of a number of reports prepared by or on behalf of the Department under the

environmental — Social Program, Northern pipelines.

Liaison with other government departments, industry and universities to exchange pipeline information.

Monitoring of pipeline developments in Alaska and proposals for pipelines in the Canadian North.

Administrative responsibilities in connection with the Mackenzie Valley Pipeline Inquiry under Mr. Justice T.R. Berger.

Plans for 1975-76

To continue to play a supportive role with respect to the ACND Committees. This will involve close cooperation with the Territorial Governments and co-ordination with other Federal Departments in the planning of development in various regions.

To share responsibility with the NWT Government for work on preparation of a regional development plan for the Mackenzie Delta Region.

To continue to present data for policy studies as and when required.

To develop, in conjunction with Territorial Governments and other federal departments and agencies, proposals for the production of economic statistics on a regular, continuing basis so as to measure economic activity in each Territory (economic accounts); the rate of change of certain prices (selected price indices) and labour force trends (employment and unemployment rates).

To compile the report on federal and Territorial Government expenditures in or on behalf of the North for 1976-77 and, subject to direction by the ACND, to begin load analysis of this data and initiate review of the effectiveness of government programs in the North.

To continue co-ordination of an active departmental pipeline research program in the Mackenzie Valley and eastern arctic lands.

To support procedures related to processing pipeline applications.

To continue to maintain liaison with other government departments, industry, academic and independent institutions on pipeline matters.

To provide co-ordination and liaison as required to the Mackenzie Valley Pipeline Inquiry.

To conduct research on proposals for mechanisms to monitor the construction and operation of any major pipelines in the North.

Long-term Plans

To continue to play a leading role for the Department in the formulation of regional development policy in the North and the preparation of regional development plans for specific regions. Research and analysis will be related to regional development planning.

To implement, in conjunction with Territorial Governments, other federal departments and agencies (in particular Statistics Canada) systems for the production of necessary economic and social statistics for the North on a regular basis.

Northern Roads and Airstrips Division

Responsibilities

The major task of this Division during the year was the administration of the Northern Roads Program approved by Cabinet in 1965. This program calls for an expenditure of \$10 million a year for a 10-year period to construct a network of roads that would connect centres of population and provide access to areas of resource potential. Its secondary function was to administer the Northern Mineral Exploration Assistance Program and the incentive programs related to access road construction assistance.

The Dempster and the Mackenzie Highways continued to be identified as the major construction projects during 1974.

Dempster Highway

From Mile 0 of the highway, just south of Dawson, YT the system stretches 417 miles to a point where it joins the Mackenzie Highway some 33 miles south of Inuvik. When completed this all-weather road network between the Mackenzie River Delta communities and Dawson in the Yukon will be the first all-weather direct link between the Yukon and the NWT as well as providing a low-cost alternative to seasonal barge traffic.

In 1973-74, a contract was awarded to Wiley Oilfields Hauling Ltd./Norm Keglavic Construction Ltd. joint venture, for construction of a section from Mile 178 to Mile 237. This section of the highway estimated to cost \$7,000,000 was scheduled for completion in 1974-75. However, because of adverse weather conditions and the use of shale rock to replace ordinary borrow materials in the subgrade, this project will not be completed until 1975-76.

Arrangements have also been completed with the Department of National Defence for the construction of the Eagle River

Bridge at Mile 236. This project began in 1974 with completion scheduled for 1976 at a total estimated cost of \$1,500,000.

In mid 1974, a contract was awarded to Keen Industries Ltd. for the construction of the subgrade from Mile 290 (Yukon Territory/Northwest Territories border) to Mile 344 (Fort McPherson). Construction activities ceased in December 1974, until January 1975 at which time the ice bridge over the Peel River will be completed and work will proceed west of the Peel River.

A contract was awarded in 1973 to Western Construction for subgrade construction from Mile 377 north to Mile 417, where it will join the Mackenzie Highway. The subgrade is nearly completed and all culverts on the project have been installed. The entire project was shutdown for the winter in December with the contractor planning to resume work by March 1, 1975.

At the end of 1974, 210 miles of the Dempster system had been completed, therefore, leaving approximately 207 miles for completion.

Cost Sharing Roads

Provision is made in the Northern Roads Program for cost-shared roads required for exploration or development purposes. Assistance is available for the construction of low standard (tote trails), medium-standard (initial access roads), and higher-standard roads (permanent access) to approved resource development projects. Two applications were received in 1974, no payments made.

Northern Mineral Exploration Assistance

To encourage the direction of capital to northern ventures, the Government introduced the Northern Mineral Exploration Assistance Program under which 40 per cent of all exploration costs of mineral, oil and gas may be recovered, and are repayable only if, as a result of the discovery, production ensues. Since the inception of the program in 1967, 218 applications have been approved and a total of \$4,250,995 has been paid in grants, leaving an outstanding commitment of \$872,915.

Plans for 1975-76

During 1975-76, heavy emphasis will be placed on planning for the development road access to the Mackenzie Delta Region both from the south along the Mackenzie Valley in the NWT and from the west via the Dempster Highway in the Yukon.

This priority program would prove most timely to aid pipeline construction in north-western Canada. It will also speed up the economic activities and development of other natural resources, thus improving opportunities for the productive employment of native northerners, one of the main social objectives of the Northern Roads Program.

Mackenzie Highway 1974-75

In May 1972, the Prime Minister announced an accelerated construction program for the Mackenzie Highway from Fort Simpson to Inuvik. This involves the design and construction of about 665 miles of highway.

In terms of construction progress, 33 miles of the Mackenzie Highway, from Fort Simpson-Mile 297 to Mile 330 was 95 per cent completed by the Spring of 1975. In September 1974, a contract for \$8.7 million was awarded to construct the section between Miles 347-394 with completion scheduled for 1978.

A 16 mile section from Miles 395-411 has been set aside for construction by Hire North as a Training/Operating Section of which 70 per cent was completed by the Spring 1975. The average number of people employed per month on this section during 1974, was 50.4, 90 per cent of which were native northerners.

With regard to the design of the highway, alignment is established for the entire Mackenzie Highway. Preliminary design is complete for the highway except for river crossings of the Blackwater River, Great Bear River, Hare Indian River, and the area past Wrigley (Mile 425-452). Final design is complete to Mile 546 (35 miles south of Fort Norman).

By spring break-up in April 1975, the right-of-way clearing done by Hire North reached Mile 580, although no clearing has yet been done at Wrigley (Mile 425-452).

As of March 1975, 107 men were employed on right-of-way clearing.

No further right-of-way clearing will taken place until construction schedules warrant it (with the possible exception of the Wrigley section).

Dene Mat (a 51 per cent native owned co-op) has continued to win contracts for work on the Mackenzie Highway. To date they have been awarded contracts totalling about \$500,000 on roads other than the Mackenzie Highway.

In November 1974, 15 equipment contracts were awarded to local firms to complete the sub-grade on Section A. Their total value was approximately \$650,000.

In 1974-75, Treasury Board requested a Cost/Benefit Analysis as part of an overall reassessment of the highway. This is proceeding and is expected to be completed by late summer 1975.

An environmental review is undertaken of all aspects of design on the highway, and in-depth studies of specific matters of environmental concern are undertaken when identified by this review.

A field environmental monitoring program is being implemented by the Mackenzie Highway Environmental Working Group.

A study of entrepreneurial opportunities within the Region arising from the construction of the highway and northern pipelines was undertaken by the Government of the NWT and completed in 1974-75. Its recommendations are now being assessed in conjunction with the Government of the NWT.

Plans for 1975-76

It is expected that final design will be complete for the entire highway by the end of 1975.

Plans are being made to extend the 16-mile training section to enable the training program for native residents to be continued. It is expected that the graduates of this training program will find job opportunities with new contracts for the highway as they are tendered.

ADVISORY COMMITTEE ON NORTHERN DEVELOPMENT

Secretariat

Responsibilities

The ACND Secretariat provides to the Advisory Committee on Northern Development, its specialist committees and working groups, a full range of Secretariat services to assist the ACND in carrying out its various functions.

Responsibilities of the Secretariat include providing for all administrative and organizational needs of committees and working groups, attending all meetings and preparing concise minutes of proceedings, as well as the preparation of background and position papers relating to the work of committees and working groups. Letters and other documents are prepared for signature of the Minister and other senior departmental officials. Ministerial briefing material is

prepared on a wide range of subjects. Inter-departmental information leading to draft policy proposals is collated and relevant legislation is reviewed with a view to the drafting of revisions, in light of the government-approved Northern Objectives.

Review of 1974-75

During the fiscal year 1974-75, meetings of ACND Committees and working groups were organized, administered and reported on to ensure that a comprehensive record of ACND activities was maintained for further committee direction and future reference. *Government Activities in the North 1973-74* was compiled, reviewed and published. Reports on *Collapsible Containers* and *Science in the North* were produced and distributed. It was agreed to publish, internally, the James Allister MacInnis Foundation reports *Arctic Diving*. During the year, four such reports appeared. A paper, *Constraints on the Employment of Native Northerners in the Northern Public Service Community*, was also produced and distributed.

The Chairman of the ACND proposed to the two territorial Commissioners, the assigning of secretariat officers to meetings of their co-ordinating committees as observers. This was implemented in part.

Plans for 1975-76

Because of staff limitations, the time of the Secretariat was fully taken up with the provision of basic Secretariat services, namely, the organization, administration and reportage of meetings of ACND Committees and working groups. Approved 1975-76 staff increases will enable a greater degree of in-depth activities, including the investigation of specific problem areas relating to the realization of overall ACND objectives; the researching and preparation of background and briefing papers for the use not only of the Secretariat, but also in support of other departmental and interdepartmental activities related to the ACND mandate in the North.

Long-term Plans

In view of the increase in committee activities and the formation of new committees, greater demands will be placed upon the Secretariat. Accordingly, over the next few years, it will be necessary to increase staff, at both officer and administrative support levels, to ensure that comprehensive

cretariat services will not only be maintained, but expanded in support of all ACND activities.

Attempts will be made to facilitate the attendance of territorial officials at ACND meetings by temporally grouping meetings and by increasing the number of meetings held in the North.

To enable participation by territorial officials when attendance is impossible, the installation of a sophisticated teleconferencing facility will be considered.

Liaison Section

Responsibilities

The Liaison Section arranges conferences on Arctic matters and polar exhibitions and serves as Departmental Co-ordinator of northern tours for royalty, vice regal visitors, senior members of the Diplomatic Corps, foreign dignitaries and officials of other federal departments. The Toponymy Unit which comes under the aegis of this department deals with all matters relating to geographical nomenclature affecting the Northern Territories, the Yukon Territory, National Parks, National Historic Parks and Reserves and Indian Reserves.

Review of 1974-75

During the summer of 1974, arrangements were made for a number of foreign journalists to visit the North under the auspices of the Department of External Affairs.

Assistance was given the Banff School of Management Alumni in planning an Arctic tour. The group visited a number of territorial communities and met Band chiefs and settlement officials.

In September 1974, the Department with the Department of External Affairs co-sponsored a tour of the North for Heads of Diplomatic Missions accredited to Canada providing them with a first hand view of some of the new developments taking place in the Territories as well as affording the opportunity to meet with the indigenous people.

The Section was also involved with the visits of two federal government ministers to various northern communities.

A close liaison was maintained with the Protocol Division and the Scientific Relations and Environmental Problems Division of the Department of External Affairs as well as the State Protocol and Special Events Branch of the Secretary of State Department.

Many inquiries from the Secretariat of the Canadian Permanent Committee on Geographical Names, government agencies, and the general public were processed. Decisions were rendered on 171 geographical names including the approval of 116 names and rejection of 58.

Three independent toponymic studies were carried out which will add considerably to our knowledge of native toponyms. The studies, carried out along the Peel River, in the Repulse Bay area and on the northern Cumberland Peninsula have produced approximately 1,000 native geographical names. These will be checked to determine their usefulness on topographical maps.

Plans for 1975-76

As Canada is attracting an increasing number of international conferences and events, plans will be developed to deal with a greater volume of the inevitable requests for individual and group visits to the Territories and ensure that an effective *modus operandi* is developed in concert with other government departments.

In addition to the responsibilities which devolve in the planning and conduct of visits and tours, the Section will become the source of information on custom and protocol.

Preliminary arrangements were made for the visit in April 1975 of His Royal Highness, Prince Charles, to the Northwest Territories.

Arrangements were made for a French ice-sailing enthusiast to continue ice-boating experiments and trials begun in 1973 on the ice of Hudson Bay. Operating out of Eskimo Point with a local Inuit assistant, the expedition was filmed by the French Television System for presentation to viewers of the French network in the fall of 1975.

Arrangements have been made for the three week visit of a seven-member Permafrost Mission representing the Peoples' Republic of China in June 1975 which formed part of the Sino-Canadian official exchanges. The delegation will consult with officials of a number of government and civilian agencies in Ottawa, Montréal, Thompson, Calgary and Edmonton will undertake a field trip to study road construction in the Territories. Visits will be made to Yellowknife, Fort Simpson, Norman Wells, Inuvik, Fort MacPherson, Dawson City, Whitehorse and Carcross.

The possibility of further toponymic studies will be discussed with the Governments of the NWT, Yukon and the Secre-

tariat of the Canadian Permanent Committee on Geographical Names.

Circumpolar Research

Responsibilities

To conduct research on the foreign Circumpolar North.

Review of 1974-75

Research was conducted on socio-economic and technical development of the foreign Circumpolar North.

Distribution of scientific and popular information, concerned with the foreign North, was provided to federal, provincial and private agencies.

A display showing development in circumpolar countries was completed and is now being shown in Europe and the U.S.A. under the auspices of the Department of External Affairs. The display will be exhibited in Canada in the latter part of 1975-76.

Plans for 1975-76

A review of the socio-economic development of Greenland will be published. In addition, two films will be produced in Scandinavia. One will deal with human and technological adaptation in the Scandinavian Arctic and the other with native identity and native organizations in Scandinavia.

Translated articles concerned with social science and technical problems in the foreign North will be published.

Studies on the socio-economic development of the Soviet North, including demographic study of Soviet native northern people, will be published.

Northern Program Planning Division

Responsibilities

The Division is responsible for planning and developing departmental programs designed to encourage economic development in the North in accordance with departmental and national objectives and policies. The division is divided into three sections: Resources Section, Transportation Section and Program Development Section.

Review of 1974-75

The following projects were carried out or directed by the Division during 1974-75.

Resources Section

Studies relating to social and economic impacts of pipeline development in the Yukon and Northwest Territories.

Studies pertaining to the economic and social significance of renewable resource harvesting in northern regions.

Studies relating to the socio-economic effects of resource projects such as Nanisivik Mines Limited and Arvik Mines Limited.

A study relating to the costs and benefits of a satellite communications system for northern communities.

Studies relating to the feasibility of a zinc-lead smelter in the Yukon.

A study relating to rural electrification in the North.

A study of energy alternatives in Mackenzie Valley communities.

Transportation Section

A study relating to petroleum prices in the Northwest Territories. Preliminary evaluation and review of the trucking industry in the Yukon.

A study relating to the supply of materials and equipment to arctic islands oil and gas exploration projects. Background studies and an assessment of the costs associated with the distribution of petroleum products in the Yukon.

A study relating to Eastern Arctic Resupply — the feasibility of using ports other than Montreal.

Preparation of a study paper related to means of improving the competitive position of northern businessmen in obtaining federal government contracts.

Preliminary evaluation of escalation factors to be used in projecting future costs of road maintenance in the North.

Continuation of work commenced in 1973, in collaboration with the Ministry of Transport, on studies related to the development of a rail strategy for the Yukon.

Program Development Section

Studies relating to existing incentive programs designed to encourage northern mineral development and development of proposals for improvements to these programs.

A study on property taxation relating to proposed Mackenzie Valley Pipeline.

Completion of the study related to the development of a system of social accounts for the North and completion of the report on social indicators.

Studies relating to royalties and income tax changes for mining companies and oil and gas companies in the Yukon and Northwest Territories.

Plans for 1975-76

Projects to be undertaken by or on behalf of the Division in 1975-76 are as follows:

Resources Section

Studies to improve knowledge on the territorial resource basis, particularly mineral and energy resources and on the potential of the territorial resource base to generate other economic activity in the Territories and Canada generally.

Studies to determine the impact of legislation and programs affecting territorial resource developments.

An evaluation to determine the implications of recent Yukon Mineral Discoveries for Infrastructure development in the Territory.

Transportation Section

Continuation of the studies relating to the development of a Yukon rail strategy.

Continuation of studies related to the trucking industry in the Yukon.

A cost-benefit study of the proposed Mackenzie Highway extension.

A review of the Northern Roads Program.

Program Development Section

Studies relating to native land claims and northern resource development.

Continuation of studies related to mineral royalties.

Studies on native involvement in resource development, including a social overview of the Nanisivik Mines Limited project, experience of native corporations in other jurisdictions, and public involvement in resource sectors in other parts of the world.

Survey on mining companies' views on incentive programs in relation to their exploration decisions, and the direction which they feel these programs should follow.

Long-term Plans

To assist in the development of the Canadian North by:

developing incentive programs to encourage the economic development of the North in accordance with the objectives that have been approved by Cabinet.

providing economic advice on matters relating to resources transportation and general economic development in the North.

Territorial and Social Development Branch

Territorial Division

Responsibilities

- To act for the Federal Government in the negotiation and administration of federal-territorial financial agreements with both Territories.
- To review fiscal and legislative policies and development plans for both the Yukon and Northwest Territories and to advise the Deputy Minister on matters relating to the administration of the Territories.
- To co-ordinate the work of the Department of Indian Affairs and Northern Development and the government of the Yukon Territory and the Northwest Territories in all federal matters not related to natural resources.
- To advise the commissioners of the Yukon and the Northwest Territories on matters of government administration in the two territories.
- To co-ordinate the transfer of provincial-type services under the jurisdiction of the Federal Government to the governments of the Yukon Territory and the Northwest Territories.
- To co-ordinate arrangements between the territorial governments and other departments and agencies of the Federal Government on matters affecting areas of territorial government responsibility.

Review of 1974-75

The Division co-ordinated work which led in June, 1974, to the enactment by Parliament of amendments to the Yukon Act and the Northwest Territories Act. The Yukon Council was increased in size from seven to 12 members and territorial elections were held in November, 1974 on this new basis. The Northwest Territories Council became a wholly elected body of 15 members, and elections were held in March, 1975. Another amendment to the Northwest Territories Act provided for the selection of a Speaker. Although not provided for in legislation, important constitutional changes were made in both Territories by a provision for the selection of two elected members to an Executive Committee in the Northwest Territories, and for the selection of a third elected member to the Executive Committee in the Yukon.

The Division arranged multi-year financing for a major program to provide community services in the Yukon, and for a program to clear endangered properties at

the base of the escarpment at Whitehorse, and to stabilize the slope. Work continued during the year to provide new and expanded townsites at Rankin Inlet and Resolute. A major new program was approved to provide expanded storage and distribution facilities for petroleum products in arctic settlements.

Financial Assistance for the Governments of the Yukon Territory and the Northwest Territories was appropriated in 1974-75 in the following amounts:

Financial Agreements

| | Yukon | Northwest Territories |
|-------------------------------|--------------|---------------------------|
| Operating Grant | \$ 5,187,000 | \$62,205,000 ¹ |
| Grant-in-lieu of income taxes | 5,446,000 | 8,351,000 |
| Capital loans | 11,603,000 | 32,331,000 |
| Amortization Grant | 4,166,000 | 9,234,000 |

Additional Financial Assistance outside the Agreements

Yukon Territory

| | |
|---|------------|
| Contribution — Hospital care of Indians and Eskimos | \$ 112,000 |
| Contribution — Medicare for Indians | 130,000 |
| Contribution — Low income Rental — Purchase Housing | 268,000 |
| Second mortgage loans to residents (CMHC) | 100,000 |
| Loans to third parties | 2,000,000 |

Northwest Territories

| | |
|---|-----------|
| Contribution — Hospital care of Indians and Eskimos | 1,449,000 |
| Contribution — Medicare for Indians and Eskimos | 309,000 |
| Second mortgage loans to residents (CMHC) | 100,000 |
| Loans to third parties | 4,000,000 |

The Division co-ordinated the negotiations for Federal-Territorial Financial Agreements to begin April 1, 1975, for both Territories.

Plans for 1975-76

The financial agreements which begin April 1, 1975, for both Territories, provide for assistance in the following amounts:

Long-term Plans

To develop long-term federal-territorial policies and financial agreements with both the Yukon Territory and the Northwest Territories and to assist the governments of the two Territories in the exercise of their responsibilities and in the development of more responsible government.

To support proposals on territorial fiscal and legislative policy before federal co-ordinating and control authorities.

In this regard, it operates a relocation project at Lynn Lake, Manitoba, for Inuit from the Keewatin District. An on-the-job training program for native northerners is also administered by the section. The Employment Liaison Section provides contact with all potential employers in the North, including resource development industries, federal departments and agencies, Territorial governments and trade unions to ensure that the native northern residents have every opportunity to share in, and benefit from, the development of the North. The work covers the development of special employment programs, the negotiating of specific agreements and their subsequent monitoring, as well as the general encouragement of employment opportunities for native northerners.

Review of 1974-75

The Employment Liaison Section continued to monitor native employment, especially related to highway and oil industry activities. The mean native involvement on Mackenzie Highway construction stood at 55 per cent for the year and at 30 per cent in the oil industry activities. Other employment agreements were made and monitored and a study was undertaken to determine the reasons why one company failed to reach its agreed level of native employment.

Work continues at various levels of study/discussion to attempt answers to native, employment and retention problems. As part of this research, staff attended numerous committees and seminars, among which was a seminar at McGill University on Employment in the Mining Industry.

The Northern Careers Program, to increase native employment in federal departments in the North was developed and approved and should be operational soon. The program will be operated by the Public Service Commission and will be based in Yellowknife.

Education and training programs were arranged for over 225 northern natives in Southern Canada during the year. These people were enrolled in university, college, technical, and high-school programs. Permanent counselling units were maintained in Ottawa and Winnipeg, and part-time counsellors were engaged in other locations as required.

The on-the-job training plan operated to the full extent of its resources. Over 50 northern natives were working as trainees with the emphasis being on trainees placed

Training & Employment Liaison Division

Responsibilities

The Vocational Training Section is responsible for providing counselling and other services for northern students in southern Canada on request, and for arranging for the relocation of interested native people to employment in southern Canada.

| | Yukon | Northwest Territories |
|---|------------|-----------------------|
| Operating Grant | 7,008,000 | 79,020,000 |
| Grant-in-lieu of income taxes | 6,590,000 | 10,732,000 |
| Capital grants ² | 11,606,000 | 30,128,000 |
| Loans for relending to third parties ³ | 3,050,000 | 4,020,000 |

The revised level includes a supplementary operating grant in the amount of \$2 million beginning in 1975-76.

¹Federally-amortized capital loans and amortization grants will be replaced by capital grants; and
²Loans for relending to third parties will be included in the Financial Agreements.

with the northern program in the NWT and the Yukon.

The operational role of the Duke of Edinburgh School at Fort Churchill was transferred to the Town of Churchill School District on July 1, 1974 on a contract basis.

Northern native trainees under the supervision of an instructor, carried out housing maintenance on houses owned by the Department at Lynn Lake, Manitoba. Native trainees supervised by the program were completing an office complex at Inuvik for the Department.

Plans for 1975-76

The negotiation of Training and Employment agreements will continue with industries establishing in the North, with special emphasis on mining and petroleum companies, to ensure maximum participation of native people in the development of the North. Work will continue to foster the increased concern of the Mining Industry in employing native people through Mining Industry Committees in the Yukon and the Northwest Territories similar to the Petroleum Industry Committee. Research and studies will continue to seek answers to problems related to native employment.

The On-the-Job Training Program will be enlarged to include approximately 100 trainees. The Duke of Edinburgh School at Fort Churchill will be permanently closed on June 30, 1975 and the Northern Program will no longer be involved in education at Churchill after that date. All students in the Churchill area will attend a new school built under the Federal-Provincial Churchill Project.

Native trainees, under the supervision of an instructor, will carry out construction work for the Department at Watson Lake, Yukon.

The Vocational Education Section will be involved in implementing Northern Careers within the Department.

Long-term Plans

The goal of the Employment Liaison Section is to maximize the placement and retention of native people North of 60 in full-time jobs North of 60. Particular attention will be paid to the problems of job creation in the smaller communities and means of assisting native people to adapt to the wage-earning society.

The Vocational Education Section will continue to provide specialist advice on Inuit education and northern education and training programs. It will also initiate new

training programs to ensure that northern natives are placed in positions at the middle management level and above.

Social Development Division

Responsibilities

The Social Development Division coordinates the administration of certain special programs for Inuit and other northern residents, either on behalf of the Government of the Northwest Territories or representing residual federal responsibilities.

The Division comprises the following sections: the Native Liaison Section, the Eskimo Art Section, the Culture and Linguistic Section, and the Special Services Section.

The Native Liaison Section is responsible for establishing and maintaining liaison with northern native associations in matters related to northern development and other issues of concern to northern native people. The section supplies funds and otherwise facilitates the process of consultation with northern native peoples — a major requirement of the Cabinet Policy Statement on Northern Development.

The Eskimo Art Section promotes Inuit art by lending the Department's collection of Inuit arts and crafts to museums, universities and other institutions in Canada and abroad. It also provides specialist advice and assistance to the public on matters relating to Inuit Art. This information service extends to include public lectures and school visits by the staff. Assistance is provided to Canadian Arctic Producers Limited, the central marketing agency for northern arts and crafts in the development of new products, and to the Canadian Eskimo Arts Council in the implementation of its recommendations. An educational program encourages artists to protect their own copyright. Infringements by southern manufacturers are discouraged by legal means.

The Culture and Linguistics Section provides a translation service in various dialects of the Inuit language, and publishes the national Inuit magazine entitled "Inuittuut". It also administers a grants scheme for the preservation and furtherance of the Inuit culture. This section also sponsors Inuit language films, assists in the publication of Inuit literature and organizes cross-cultural conferences.

The Special Services Section provides specialist advice on various matters relating to Inuit and northern native people generally. It is also responsible for the Eskimo Loan

Fund, the Eskimo Small Boats Assistance Scheme and the Canadian Reindeer Project, and participates in the deliberations of the Federal-Provincial Committee on Financial Assistance to Indians and Eskimos of Labrador.

Review of 1974-75

The Division provided additional funds to Inuit Tapirisat of Canada to allow it to complete its NWT. Land Claims Research Project and related Use and Occupancy Study. Funds were also given to the Northern Quebec Inuit Association and the Indian Brotherhood of the NWT for similar research. A three year contract was signed with Inuit Tapirisat for an Inuit Language Commission to determine a common system of writing the Inuit language.

In addition, the Division administered the funds made available to northern native associations by the Federal Government to help them put forward their interests in a joint intervention before a Commission of the Mackenzie Valley Pipeline Inquiry, and took part in the renegotiation of the five year Federal-Provincial Agreement on Financial Assistance to the Indians and Inuit of Labrador. During the year, regular informal discussions with representatives of the northern native associations resolved many issues of concern and have generally led to a clearer understanding of the needs and aspirations of the native people of northern Canada.

An "Arctic Women's Workshop" was organized in Toronto in June 1974 with delegates from every Canadian Arctic community. This workshop coincided with the "Crafts from Arctic Canada" Competition/Exhibition organized by the Canadian Eskimo Arts Council with financial assistance from the Division and the Territorial Government. Delegates took the opportunity to attend the World Council of Crafts men's Conference which took place at the same time. In early 1975, the Tactile Collection of Eskimo Art completed its cross Canada tour of 32 centres where it was enjoyed by approximately 8,000 visually handicapped.

The first Inuit film unit was established in cooperation with the National Film Board and one of the films produced was successful in international competitions.

During the year, the government reindeer herd in the Mackenzie Delta was sold to Canadian Reindeer Limited, a private company comprising Inuit shareholders.

The Eskimo Loan Fund was increased to \$3 million, and an associated grants program of \$200,000 to further economic development among Eskimo people in the NWT was authorized. A total of 68 loans having a value of \$1,286,972 were made to Eskimos of the NWT and arctic Quebec. Also, \$241,700 was paid out in economic development grants.

Plans for 1975-76

The Division will continue to expand and improve its liaison with northern native associations from the Yukon to the Labrador. Funds will be provided for the land claims research activities of the various associations, to facilitate the process of consultation between the government and native people in matters of northern development, and to permit northern associations to participate at the hearings of the Mackenzie Valley Pipeline Inquiry.

In recognition of International Women's Year, a multi-media exhibition, "Inuit Women in Transition", will travel to university galleries across Canada. A major retrospective drawing exhibition of the famous artist Pitseolak of Cape Dorset will circulate internationally. In late 1975, Canadian Arctic Producers Limited will celebrate its tenth anniversary, and control of the company, whose annual sales of Inuit arts and crafts now in excess of \$2.5 million, will pass from the government to the Inuit Co-operatives of the NWT.

During the year, plans will be developed for Inuit participation in Festival '76 to be organized under the aegis of the National Arts Centre in Ottawa, as well as in the Cultural Olympics which are to be held in the same year.

The National Museum of Man will be supported in a four-year program of salvage archaeology in the Arctic to survey archaeological sites. Surplus whalebone from these sites will be stockpiled for release to Eskimo carving co-operatives.

The Eskimo Loan Fund will be enlarged to \$3.6 million and Inuit of Labrador will have access to it for the first time. Grant funds for Inuit economic development will be increased to \$400,000.

In cooperation with other Divisions of the Department and the Government of the NWT a review of the Eskimo and other loan funds operating in the North will be undertaken with a view to reducing the differences between them.

Long-term Plans

The Social Development Division will continue to provide specialist advice on various matters relating to Inuit and the North in general. As native land claims move towards settlement, emphasis on liaison and consultation with northern native organizations will be maintained. Support of Inuit cultural activities will be broadened and local initiative in cultural endeavours will be further encouraged. The Division will strive to ensure the implementation of the policy of the Government of Canada — 'Northern Canada in the '70's' — with particular emphasis on involving native northerners in all matters affecting them.

Northern Research Division

Responsibilities

The responsibilities of the Northern Research Division, formerly the Social Research Division, are:

- to sponsor and conduct research into social problems of northern development
- to encourage and support northern research by non-government agencies
- to collect and disseminate scientific organization
- to analyse research findings and channel proposals to appropriate program managers
- to assist the territorial governments with the co-ordination of research activities in the North
- to operate the Inuvik and Eastern Arctic Research Laboratories
- to make plans for additional laboratory facilities.

Review of 1974-75

Northern research continued in 1974-75 with an emphasis on work related to problems of social change for native people in the North and, in particular, on the possible effects of large-scale resource development. A large portion of this research was done by university scientists and others working under contract for the Division, whose officers supervised and co-ordinated these research projects. Research projects carried out or directed by the Division in 1974-75 include:

Settlement bibliography of scientific literature on settlements in the NWT.

Inuit and the criminal justice system: Fro-bisher.

The cooperative movement among the Inuit of Nouveau-Québec.

The teaching and research programs sponsored by Canadian universities in the North. Problems of demography and human ecology in the North.

A project to assist the Eskimo community of Nain, Labrador, in defining and responding to problems of social change.

The effects of television on northern children.

A study of attitudes of native peoples to development.

The socio-cultural impact of a Mackenzie Valley Pipeline.

The state of research and researchers in the North.

Social impact on Old Crow, YT of the Porcupine route versus the coastal route for a pipeline.

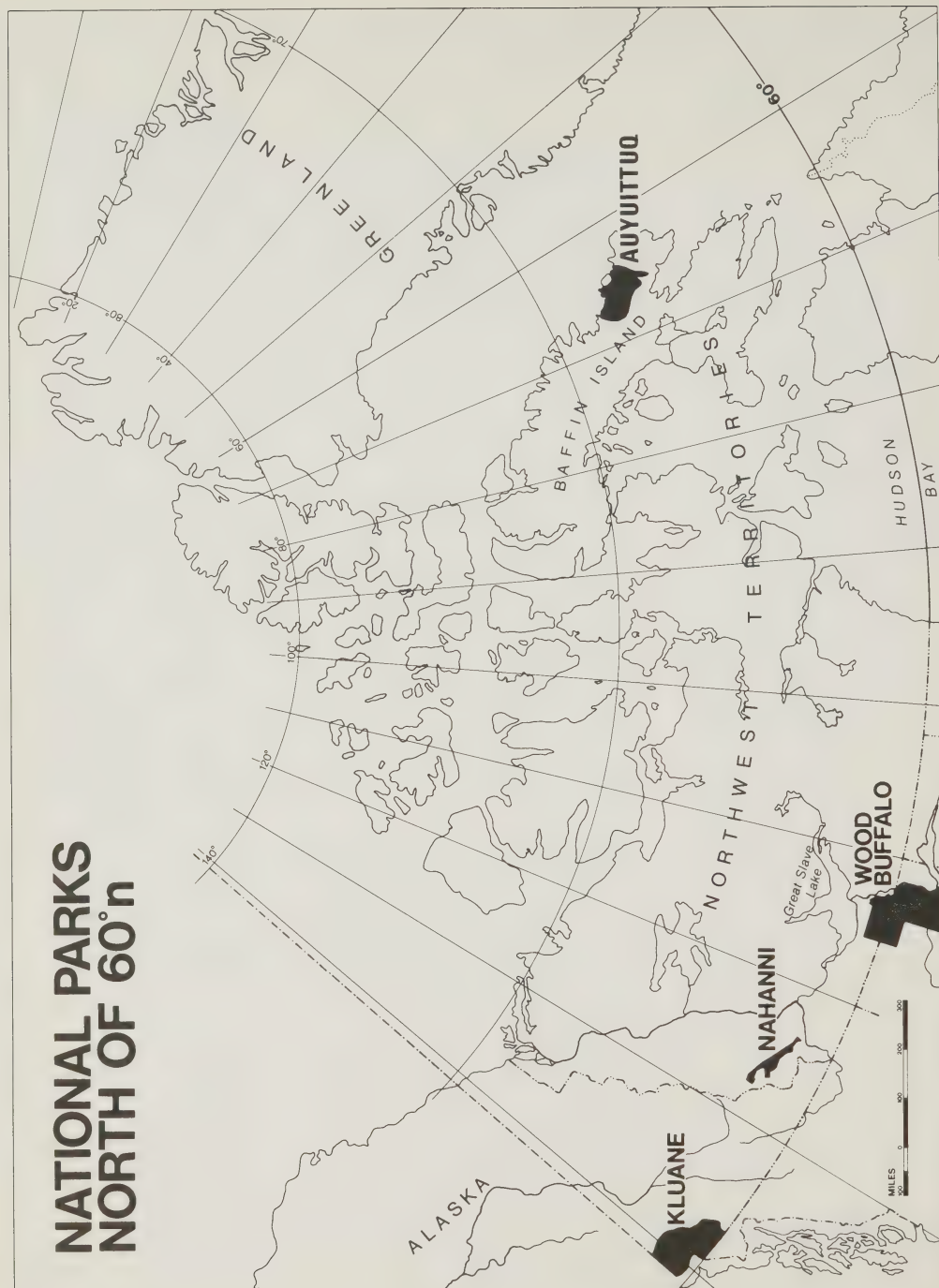
During the year, efforts were made to formalize and develop the Division's analysis capacity so that research findings could be more effectively translated into policy proposals and communicated to program managers. Preparations were also made for the formation of the Northern Social Research Committee which will, among other tasks, advise the Division on priorities in Northern Social research, and help bridge the gap between scientists and managers. The Committee's membership will be drawn from the territorial governments, federal departments with northern social responsibilities, native organizations, and the professional community outside government.

The Division was asked to participate in the Arctic Islands Pipeline Research Program, co-ordinated by the Environmental-Social Program, Northern Pipelines, and plans were laid for community studies of Spence and Resolute, NWT in conjunction with the Government of the NWT. The studies were to begin in the summer of 1975.

Officers of the Division were seconded for varying periods of time during the year to the Northern Quebec Inuit Association, and the Indians of Quebec Association, to assist them in research and other matters.

In 1974-75, the thirteenth year of the Northern Scientific Training Grants Program for northern research institutes and scientific research expeditions, amounts totalling \$325,000 were awarded, as recommended to the Minister, by a Grants Committee.

Through these grants, a large number of northern research projects were supported in



a wide variety of scientific disciplines. Grants were made to:

Arctic Studies Group (University of Montreal)
 Boreal Institute (University of Alberta)
Centre d'Études Nordiques (Université Laval)
 Committee on Arctic & Alpine Research (University of British Columbia)
 Committee on Northern Studies (University of Manitoba)
 Institute for Northern Studies (University of Saskatchewan)
 Institute of Social & Economic Research (Memorial University)
 McGill Committee for Northern Research (McGill University)
 Committee for Arctic & Sub-Arctic Research (University of Toronto)
 Northern Research Group (University of Ottawa)
 Northern Research Committee (University of Western Ontario)
 Centre de recherche Nordique (Université du Québec à Chicoutimi)
 The Presidential Committee on Northern Studies (McMaster University)
École Polytechnique (Université de Montréal)

A total of \$69,500 was awarded in 1974-75 to Canadian universities to support specified research into northern problems identified by government. The projects supported by this program are included in the above list of research projects carried out or directed by the Division. The Division continued to operate the Inuvik Scientific Research Laboratory in Inuvik, NWT. This laboratory, opened in 1963, provides general laboratory and other facilities to support research in a variety of scientific disciplines in the Mackenzie Delta region. During the year, construction of a similar laboratory in Inuvik, NWT was largely completed. This laboratory, the second of a series, will be opened in time for the 1975 summer field season to serve the eastern Arctic. Attempts are being made to keep the local population well informed about the laboratory's operations through the circulation of a local information sheet, and through a local advisory committee. Preliminary planning was carried out during the year for a third laboratory in Whitehorse to serve the Yukon area, and consideration was given to the consolidation of scientific facilities in Resolute in connection with the planned relocation of the Resolute townsite.

Plans for 1975-76

The Division will continue to develop and carry out research programs directed towards the social problems of northern development and, in particular, to place an emphasis on assessing the potential social impact of pipelines and resource development in the North.

The Division's capacity for analyzing research findings and evaluating programs will be strengthened and developed to ensure that the Division's research effort is given proper consideration in the formation of northern social policy.

The Northern Social Research Committee will be used to help define research priorities, and to assist in the co-ordination of northern social research.

The Division intends to set up a documentation unit to systematize and improve its program of collecting and disseminating scientific information.

The grants program will continue in 1975-76 to support a wide range of northern research.

The Eastern Arctic Research Laboratory will be opened in the summer of 1975 for its first season of support to scientific research. Planning for the Whitehorse Laboratory will be completed during the year and designs will be drawn up for its construction, scheduled for the following year. The consolidation of laboratory facilities in Resolute will be given further consideration.

Long-term Plans

The Northern Research Division will continue to encourage the scientific investigation of the North in accordance with the Department's statutory responsibility to foster northern research. It will continue to provide advice and research services to the Department's management and programs, in support of the Government's northern policy for the seventies. In addition, the Division intends to assist the territorial governments and native organizations to develop their own research capacities.

PARKS CANADA

National Parks Branch

Responsibilities

The National Parks Branch is responsible for Canada's national parks, national marine parks and national landmarks. The Branch examines and evaluates sites to determine their potential as national parks, marine

parks and landmarks, and plans for the development of existing parks. There are four national parks north of the 60th parallel: Kluane in the Yukon Territory, Wood Buffalo, Nahanni and Auyuittaa in the Northwest Territories and a national park reserve in the East Arm of Great Slave Lake, also in the Northwest Territories. Auyuittaa is Inuit meaning "Land of the Big Ice", the name selected in 1975 for the national park on the Cumberland Peninsula of Baffin Island. Kluane, Nahanni and Auyuittaa National Parks have been included in the Schedule of National Parks Act which was amended in 1974.

Plans for 1975-76

To carry out aerial and ground reconnaissance of the Arctic coast and inland region, east of the Mackenzie Delta with a view to determining areas warranting further investigation as possible future national parks, marine parks and landmarks.

To undertake preliminary field investigations of the Bathurst Inlet of the arctic islands to assess and document the potential national park value of this area in relation to areas covered in previous surveys.

To examine the islands of Hudson Bay for the purposes of identifying, for further study, features and areas of particular national or marine park interest.

To formulate proposals for the establishment of new parks under the National Parks Act.

To advance the planning and operation of existing national parks.

Long-term Plans

To undertake field studies in the North aimed at identifying natural landscapes and environments which are not represented in the national parks system. These studies are part of a long-range planning which will make possible the establishment of several new national parks in Canada, before the turn of the century.

To plan for the development of existing national parks through resource inventory and environmental studies.

To study the effect of human activities in national parks particularly those having an arctic environment and to conduct specific studies on visitor behaviour in the northern parks.

To collaborate with other agencies responsible for outdoor recreation and tourism in the North so as to produce an integrated park system complementary to

the objectives of the various agencies concerned.

Future National Park, Great Slave Lake, NWT.

Review of 1974-75

An area of 2,680 square miles around Fort Reliance in the East Arm of Great Slave Lake was set aside in 1970 as a future national park. In 1971, a five year assessment period was agreed to at the request of the Snowdrift Band in order to provide sufficient time for the Band to examine the possible effects of the park on their way of life.

Plans for 1975-76

The five year assessment period terminated in March 1975, however, to date the Band has not expressed its view on the potential impact of the park. Until the Band's assessment is received, plans to proceed with the development of the park will be further delayed.

Proposed Pingo National Landmark, Tuktoyaktuk Peninsula, NWT.

Review of 1974-75

Pingoes, large dome-like structures of ice covered by a mantle of tundra soil and vegetation, are one of the several frost phenomena which characterize northern environments. Following field examinations of the Tuktoyaktuk Peninsula, a preliminary proposal for a Pingo National Landmark was prepared in 1973. During the following year, the concept for the landmark proposal was refined and distributed within the Department for comment.

Plans for 1975-76

A field trip is planned for June with members of the Ottawa staff to examine the area and define a boundary. Following consultation with the Territorial Government, steps will be taken in implementing the Pingo National Landmark proposal.

Wood Buffalo National Park

Review of 1974-75

Budget for 1974-75 — Capital: \$357,700
Operations & Maintenance: \$688,700

Fire fighting expenses of \$450,000 were incurred during the summer of 1974. The Park had 18 forest fires which burned approximately 55 acres compared with 8,995 acres last year. Wet weather, together

with a well-experienced presuppression program resulted in the low fire losses and reduced expenditures.

The on-going bison management program continued, with aerial surveys to determine migration patterns caused by high water levels in the Peace-Athabasca Delta. A report has been prepared and submitted. Herd disruption prevented vaccination for anthrax — no anthrax outbreaks were recorded. Corral site assessment work was completed.

Monitoring studies were initiated in the Peace-Athabasca Delta. The Resource Inventory Program was initiated and visitor-impact studies carried out at Pine Lake. Negotiations on Indian land entitlements are still continuing.

An interpretive planning guide, intended to contribute to the Master Plan for this park was published. An area plan was completed for Peace-Athabasca Delta. Work began on an area plan for the Pine Lake activity centre.

No official record of attendance was kept for Wood Buffalo National Park.

Plans for 1975-76

Bison surveys will continue and corrals will be constructed. A vaccination program is planned for June (approximately 2,000 - 3,000 animals), and anthrax surveillance will continue. Corrals will be established in bison ranges to avoid long drives which are hard on the animals.

The resource inventory program will continue in 1975. The interpretive planning guidelines published in 1974-75 will be continuously upgraded. There will be an interpretive planner in the field dealing specifically with Ft. Chipewyan and the Peace-Athabasca Delta. We will complete for approval, plans for Pine Lake activity centre and Peace-Athabasca Delta. A Youth Conservation-Corps comprising eight females and eight males will be formed.

Long-term Plans

Future and present plans will be discussed through public participation and collaboration with the various agencies concerned.

Nahanni National Park

Review of 1974-75

Budget for 1974-75 — Capital: \$244,600
Operations & Maintenance: \$123,700

Nahanni National Park is still administered by the Wood Buffalo National Park Office. Office accommodation has been

acquired in Ft. Simpson for Nahanni Headquarters. This park is now staffed with two full-time wardens and three seasonal wardens. The temporary warden headquarters situated at Nahanni Butte is now permanent.

Visitor impact studies were initiated and completed at Virginia Falls and Kraus' Hot springs.

Plans for 1975-76

The administration of Nahanni National Park will be separated from Wood Buffalo National Park with Headquarters established in Ft. Simpson. The biophysical resource inventory will be initiated as well as the visitor-impact studies at Rabbit-Kettle Hot-springs. The visitor-impact studies will be continued at Virginia Falls and Kraus' Hot-springs. An impact assessment on aircraft use will be initiated. A river access study on the South Nahanni River combined with visitor facility locations will also be initiated. Interim Management Guidelines will be completed.

Approximately 520 persons visited the park.

Long-term Plans

These will involve the preparation of alternative conceptual plans and their review through public participation and collaboration with the various agencies concerned.

Kluane National Park

Review of 1974-75

Budget for 1974-75 — Capital: \$709,400
Operations & Maintenance: \$545,600

A Conservation Corps program was initiated. The Conservation Corps report indicated its success. The enthusiasm created by the young people was gratifying and indicative of the programming and input on the part of the staff members of Kluane National Park.

The public access transportation and air study is still continuing. Interim Management Guidelines were completed to provide guidance for protection and administration of the park until sufficient data is gathered to prepare a provisional Master Plan.

The biophysical resource inventory was initiated as well as visitor-impact studies at Kathleen and Sockeye Lakes. Five companion claims (approximately 45) were acquired.

Approximately 510 persons visited the park.

Plans for 1975-76

The Conservation Corps Program will continue employing 16 females.

The biophysical inventory will be continued as well as visitor-impact studies at Kathleen and Sockeye Lakes. A study of the affect of aircraft noise on wildlife will be initiated.

National Historic Parks and Sites Branch

Responsibilities

To commemorate, in consultation with government of the Northwest and Yukon Territories, those persons, places and events recognized as being of national historic importance in the Territories.

Review of 1974-75

Parks Canada is continuing restoration of the stern-wheeler *S.S. Klondike*. On the site adjacent to it, a Visitor Reception Centre is planned which will provide information on the story of Yukon River navigation and its relation to commerce and travel since Gold-rush Days.

Foundation stabilization was effected on the K.T.M. Building and ground maintenance performed on all properties under the Department's ownership. Bear Creek, located outside of Dawson City, will be acquired for a national historic park.

The Klondike Goldrush International Historic Park Advisory Committee met once during the year.

| Budget — 1974-75 | Capital | Operations & Maintenance |
|------------------|-----------|--------------------------|
| Dawson City | \$351,000 | \$164,800 |
| Whitehorse | \$354,900 | \$110,200 |

Long-term Plans

The Historic Sites and Governments Board of Canada will continue to study ways and means of commemorating the history of the Sub-Arctic with its varied themes of the people, early exploration, fur trade, whaling and others.

Restoration will be undertaken on a number of the historic buildings acquired at Dawson City, the focal point of the Gold-rush. This major on-site program will also include the stabilization of other structures. The program will commence with media coverage of the story of Dawson City and the gold fields. It is planned to erect a Visitor Reception Centre on a gold creek.

Auyuittuq National Park

Projects completed in 1974-75

Budget for 1974-75: Capital, \$375,900; Operations & Maintenance, \$71,209.

During 1974 over 400 persons visited the park, compared with about 100 the previous year. Three new buildings were completed in Pangnirtung, the Park Administration Building, the Chief Warden's Residence and a warehouse/garage. In Broughton Island, a warden's residence with office attached was completed. The personnel of the park includes the superintendent, chief warden, two full-time parks wardens and two seasonal wardens. The Administration Building is staffed by a secretary, a clerk and a seasonal information attendant.

A system of shelters within the park was completed. The four emergency shelters are placed at strategic locations in Pangnirtung Pass and contain emergency food and fuel, a first-aid kit and a radiotelephone.

Formerly known as Baffin Island National Park, the park was re-named in February 1975 after consultation with the local Inuit communities.

Plans for 1975-1976

Budget for 1975-1976: Capital, \$206,600; Operations & Maintenance \$129,500.

A heavy influx of visitors is expected as the park is becoming increasingly popular every year. A series of interpretation exhibits in the Park Administration Building is being planned to help the visitor to better understand the Park environment.

The Quebec Regional Office will soon publish a comprehensive book on the park. Written by experts in each field, the book covers geology, archaeology and ecology, and gives practical hints for visitors.

The inventory of the park's resources will continue. Studies to be carried out include aerial photography of some regions, glaciation studies, the second phase of a socio-economic study, the completion of the bio-physical inventory, and a regional planning study for Pangnirtung and Broughton Island.

Long-term Plans

No intensive developments are envisaged within Auyuittuq National Park. The basic objective of the park continues to be "maximum conservation" and the promotion of visitor services in the surrounding Inuit communities. Studies will continue to better understand the natural resource base, and to identify the natural areas and cultural sites of greatest visitor interest.

Agreements for Recreation and Conservation

Review of 1974-75

Formerly called the Byways and Special Places Program, the Agreements for Recreation and Conservation Program was reorganized to Branch status within Parks Canada during 1974-75. Most of the year's operations were devoted to setting up broad policies and the development of proposals for a national system of wild rivers and historic waterways, and historic and scenic land byways.

Possible initiatives of the ARC Program in the Territories are presently under study.

Plans for 1975-76

Proposals for possible land and water routes will be discussed with the Territorial Governments.

DEPARTMENT OF JUSTICE (JUST)

Responsibilities

The Department is responsible for the appointment of judges to the Territorial Supreme Courts and the direction of Court proceedings on behalf of the Crown including prosecutions under the Criminal Code and other federal statutes. The Department has also a shared responsibility for the cost of legal aid in the Northwest Territories.

Review of 1974-75

Payments totalling \$53,622 were made to the Northwest Territories representing the federal share of the cost of legal aid for the year ending March 31, 1974. The terms of the legal aid agreement between the Northwest Territories and the Federal Government were reviewed and some minor amendments agreed to.

Discussions continued concerning the establishment of a shared-cost legal aid program in the Yukon Territory and of programs in both territories to provide compensation to victims of crime.

The Department and the Government of the Northwest Territories have agreed to cost-share an experimental community legal services project in Frobisher.

Plans for 1975-76

It is hoped that discussions now taking place will result in the establishment of the shared-cost programs referred to above.

It is planned to enter into cost-sharing arrangements for a courtworker service in the Yukon Territory, and there is a possibility of similar arrangements being made with the Northwest Territories.

DEPARTMENT OF LABOUR (LAB)

Responsibilities

The Department has one overall responsibility which is to achieve economic and social progress with justice through the promotion of good industrial relations and improved working conditions. To further its basic responsibility, the Department's principal activities are designed to:

settle industrial disputes and encourage co-operation between labour and management;

establish and maintain fair standards of wages, working conditions and safety in employment;

achieve equality of job opportunity and safeguard human rights in matters affecting labour;

provide research, statistical and information services in labour matters to union, employers, government and the public;

promote and participate in national and international tripartite consultation in matters affecting labour.

Review of 1974-75

Industrial Relations

Conciliation and Arbitration Branch

The Branch participates in labour relations in the Northwest Territories and the Yukon in connection with proceedings under Part V (Industrial Relations) of the Canada Labour Code.

Union-Management Services Branch

The Union-Management Services Branch provides, within federal, provincial and territorial areas of the industrial relations world, the type of assistance necessary to develop, establish and maintain attitudes, procedures and relationships that will effect improvement in the union-management relations climate in Canada.

The activities of this Branch in the North during 1974-75 were limited to the establishment of five union-management consultation committees in various divisions of White Pass

and Yukon Route and White Pass Petroleum Services, in Whitehorse, Yukon Territory, at the request of the Head Office of these companies in Vancouver. These companies are under federal jurisdiction.

Plans for 1975-76

No plans have been formulated beyond the support and servicing of those union-management relations procedures already established.

Fair Employment Practices Branch

The Fair Employment Practices Branch of the Canada Department of Labour is responsible for investigating complaints of discrimination in employment on grounds of race, colour, religion or national origin in areas under federal jurisdiction and for promoting equal employment opportunity for disadvantaged minority groups.

During the fiscal year 1974-75, a few complaints relating to Territorial Fair Employment Practices Ordinances or other labour matters under Territorial jurisdiction were received and the complaints referred to the appropriate Territorial administration.

During 1975-76, the Branch will participate in the work of the Sub-Committee on the Employment of Native Northerners of the A.C.N.D. An officer of the Branch and one or two other members of the Sub-Committee will monitor the effectiveness of current procedures designed to promote the employment of native people on government contracts in the North.

It is probable that amendments to federal fair employment practices legislation and to regulations relating to labour conditions on government contracts will enable the Federal Government to implement more aggressive affirmative action programs to increase opportunities for training and employment

| Activities | No. of Cases |
|--|--------------|
| Disputes referred to Conciliation Officers pursuant to Section 164 of the Code. | 6 |
| Disputes referred to Conciliation Commissioners pursuant to Section 166 (a) of the Code. | 1 |
| Disputes referred to Conciliation Boards pursuant to Section 166 (b) of the Code. | Nil |
| Provision of Mediation Services pursuant to Section 195 of the Code. | 1 |
| Disputes arising over the interpretation, application or alleged violation of provisions of collective agreements whereby the Minister was asked to appoint an arbitrator or arbitration board chairman. | 1 |

of native people in connection with government contracts in the North. It is expected that there will be legislation and regulations empowering the Federal Government to require that contracts contain provisions ensuring equal opportunity for employment and career advancement of native people in the North by encouraging and assisting them with training and apprenticeship. It appears that the sub-committee mentioned above would be heavily involved in developing procedures to administer such enabling legislation and regulations.

EMPLOYMENT STANDARDS

Labour Standard Branch

Review of 1974-75

Federal Contracts

Inspections on government contracts

During the fiscal year 20 inspections were carried out by branch officers. Of these 16 were made in the Northwest Territories and four in the Yukon Territory. These inspections directly affected 15 main contractors and five sub-contractors. Wage adjustments were collected from four main contractors and three sub-contractors involving \$10,423.97 and 49 employees.

Wage Schedules Issued

| | NWT | YT |
|------------------------|-----|----|
| Construction Contracts | 76 | 5 |
| Service Contracts | 19 | 2 |

Part III of the Canada Labour Code (Labour Standards)

It should be noted that the provisions of Part III of the Canada Labour Code (Labour Standards) do not apply to a work, undertaking or business of a local or private nature in the Yukon Territory or the Northwest Territories. The Territorial Councils have issued ordinances respecting employment standards in activities that fall within their jurisdiction. Part III of the Code does, however, apply to those kinds of businesses that normally come within federal jurisdiction when located in the provinces.

During the 1974-75 fiscal year, five complaints were investigated under Part III of the Canada Labour Code (Labour Standards), of which two were in the Yukon

Territory and three in the Northwest Territories. As a result of these investigations, violations were corrected and the sum of \$1,419.96 was recovered for 28 employees.

In the same period there were 17 routine inspections carried out under the same authority, of which 11 were in the Yukon Territory, and six in the Northwest Territories. Nine of these were found to be in compliance with the code. In the other eight cases, two of the companies were no longer in business, two inspections were not completed and the inspector will be taking follow-up action, two were counselling calls and two were violations of Division VI — Record Keeping.

It is the custom of the Branch to carry out routine inspections of undertakings subject to federal jurisdiction or which have contracts with the Federal Government in the Northwest or the Yukon Territory. The numbers are determined by our complaint load and available resources. Our normal program of inspections will be carried out in the fiscal year 1975-76. Complaints received will be given priority.

Accident Prevention and Compensation Branch

In addition to its long standing activities in the Yukon and Northwest Territories with respect to the administration of the Government Employees Compensation Act, the Accident Prevention and Compensation Branch has during 1974-75 continued to make progress in the implementation of a comprehensive employment safety program on employers' premises subject to Part IV of the Canada Labour Code as well as in Public Service premises under the authority of the Occupational Safety Policy for the Public Service of Canada.

Accident Prevention Division

Responsibilities

Through the provisions contained in the Canada Labour Code Part IV (Safety of Employees), the Accident Prevention Division is responsible for ensuring the existence of safe and healthful working conditions in federal works, undertakings and businesses. In the federal Public Service, the Division monitors existing accident prevention programs and assists in their development and improvement in accordance with the occupational health and safety policies issued by Treasury Board.

Review of 1974-75

Accident prevention activities in the Territories continued to increase in scope during 1974 particularly in the fields of safety program management, training, accident investigations and technical surveys. The programs conducted during the year and in previous years are showing significant results. The comprehensive safety program of the Northwest Lands and Forest Service of DIAND started in 1973, reduced accident by 42 per cent in that year. During 1974, the program was intensified with 85 per cent reduction in lost time injuries and a 50 per cent reduction in medical-aid injuries. The Northern Canada Power Commission, in spite of being handicapped by a major re-organization, was able to give first aid training to 90 per cent of its staff and to reactivate the safety committees at the larger plants. An extensive safety and first aid training program for management and supervisors was arranged for the Northern Transportation Company Limited which resulted in the establishment of safety committees at all their bases.

Routine safety visits to assess employment and health standards were conducted at Public Service and federal enterprise locations at Fort Simpson, Fort Smith, Yellowknife, the Strutt Lake Project in the Northwest Territories. In the Yukon routine safety visits were conducted at work sites of the Yukon Forest Service, National and Historic Parks, National Health and Welfare Post Office, Customs and Excise, Ministry of Transport, Northern Canada Power Commission and the Canadian National Telecommunications at Carmacks, Mayo, Dawson, Haines Junction and points in between. The head office locations in Whitehorse of the above-noted work sites were visited and discussions were held with management relating to conditions found in the field to and accident prevention program development.

During the year 1974-75, only one fatal plane crash occurred. This claimed seven lives at Rae Point on Melville Island, and is still under investigation.

With the cooperation of the Northwest Lands and Forest Service at Fort Simpson the Department produced an audio-visual for training purposes on "Safety Around Small Aircraft and Helicopters".

The existing safety inspection services agreements with the Northwest Territories for boilers & pressure vessels and electrical inspections was renegotiated in 1974. Also signed was an agreement for Northwest

Territories weigh scales inspections to enforce the Canada Motor Vehicle Hours of Service Regulations. Inspectors of the Territorial Government acting on behalf of the Department inspected 664 units. Similar inspections were made by special arrangement with the Yukon Territorial Government of 21 units in that territory.

Plans for 1975-76

The Department's safety program in the Territories will continue on an increased scale in 1975-76. This will include general and technical surveys, safety and management training, and routine inspections by Territorial personnel on behalf of the Canada Department of Labour.

Most major employment locations in the Territories are scheduled for safety visits and safety visits. These work sites and others will be surveyed to assess employment safety and health conditions. Technical surveys to evaluate the exposure of employees to environmental hazards will be continued. Particular attention will be given in the coming year to work locations where heavy equipment such as chain saws, fire pumps and fork lift trucks are used. This was planned for 1974-75 but was not accomplished.

Routine annual inspections of boilers, pressure vessels, elevating devices, electric and gas installations will be undertaken as necessary to meet the requirements of the regulations. Negotiations will continue with the Territorial Government of the Yukon towards concluding a safety inspection service agreement for the regular inspection of these installations.

Long-term Plans

Existing programs in the accident prevention field will be continued and extended to include those work locations not already covered. Routine safety visits will, in future, automatically include the conduct of technical surveys such as evaluations of noise, toxic gases, illumination, etc. where field conditions suggest the need for such surveys. Safety program management work and safety training will be continued at all employment locations particularly where accident prevention activities have been assessed as less than satisfactory.

Accident Compensation Division

Claims of Federal Government employees usually employed in the Yukon and Northwest Territories, for compensation for occupational injuries or diseases were received in

the Branch, certified and forwarded to the Workers' Compensation Board of Alberta for adjudication and payment under a federal-provincial arrangement. During the calendar year 1974, 451 claims were received and approximately \$175,092 in disbursements were made.

RESEARCH AND DEVELOPMENT

Economics and Research Branch

The Economics and Research Branch conducts an annual Survey of Wages and Working Conditions which covers all establishments in Canada having 20 or more employees. In 1974, this survey included 68 establishments in the Yukon Territory and 86 establishments in the Northwest Territories. The survey will be carried out again in 1975, along with a survey effective May 1, 1975 to obtain information on the distribution of employees by wage and salary rates in industries under federal jurisdiction in these two areas.

The Branch also maintains a file of collective agreements covering employees in the Yukon and Northwest Territories and publishes some information on labour organization and union membership in these areas.

Legislative Research Branch

The Legislative Research Branch, in order to meet its objectives which include advisory and information services on matters pertaining to labour laws, issues publications and articles on a regular basis such as *Legislative Review*, *Labour Standards*, *Human Rights*, and articles in the *Labour Gazette*. These publications and articles cover all recent changes relating to laws, regulations, labour standards and human rights in Canada. In addition, the Branch initiated the *Labour Case Reporter* and the minimum wage paper, established regional desks, undertook a revision of its study on wage protection as well as a preliminary work for CASHRA of which NWT is a member, and provided expertise on the New Labour Ordinances of Northwest Territories.

The Branch intends to increase its involvement in labour affairs by initiating more studies and responding to any further demand made by the Yukon and Northwest Territories.

DEPARTMENT OF MANPOWER AND IMMIGRATION

Responsibilities

The fundamental purpose of the Department is to further the economic and social development of Canada by helping to meet the employment needs of both employers and workers in every part of Canada. The Department endeavours to achieve this purpose through the application of wide-ranging programs and services, which include a network of strategically located Canada Manpower Centres, professional counselling, recruitment services, training programs, relocation assistance, control of non-immigrant workers, industrial adjustment assistance and programs for people with special needs.

Operational Jurisdictions

The operational responsibilities for the delivery of the Department's services in the Canadian North are assigned as follows:

Yukon Territory

The Director General, Pacific Region, Department of Manpower and Immigration, Royal Centre, P.O. Box 11145, 1055 West Georgia Street, Vancouver, British Columbia, B6E 2P8

Northwest Territories

The Director General, Prairie Region, Department of Manpower and Immigration, Room 190, Grain Exchange Bldg., 167 Lombard Ave., Winnipeg, Manitoba, R3B 0T6.

Northern Quebec

The Director General, Quebec Region, Department of Manpower and Immigration, 550 Sherbrooke Street West, Montreal, Quebec H3A 1B9.

Federal — Territorial Relations

The Federal-Territorial Manpower Needs Committee is an intergovernmental committee with the mandate to discuss all aspects of manpower policies and programs. In the Northwest Territories, the appointment of a Co-ordinator Programs Consultant Federal-Territorial Relations improved the Department's ability to develop co-operative approaches to Federal-Territorial planning and consultation. During 1974-75, a formal link was established between the Federal-Territorial Manpower Needs Committee and the A.C.N.D. Sub-Committee on Employment of Native Northerners.

In the Yukon, the Manpower Needs Committee established a sub-committee responsible for identifying training needs and recommending institutional and industrial training programs.

Review of 1974-75 Operations

Yukon

The major focus of the Department was to improve and extend services to outlying areas of the Yukon. CMC Whitehorse received additional resources to allow establishment of regular itinerant services. There are naturally problems in adequately servicing this large area, however, in addition to our Outreach Workers, every Yukon community was visited at least once by our counsellors. They were able to extend CMC services to both employers and employee clients, special needs clients, and generally provide assistance and information related to our services.

An active Canada Manpower Service to Employers Program throughout the year enabled employers to train over 1,000 workers and provided financial incentives to employers to upgrade their labour force. Our

staff were involved through personal visits to employers and through membership in associations such as the Chamber of Commerce and Chamber of Mines.

A major agreement was negotiated under the Manpower Consultative Service (MCS) with the WhitePass and Yukon Corporation, Teamsters Union and the Yukon Territorial Government. The agreement provides for a comprehensive study of the manpower factors including a training and upgrading program for 350 northern employees, establishment of a company training centre, review of supervisory policies and job enrichment, examination of the housing situation in Whitehorse and improvements in working conditions.

The Summer Student Employment and Activities Program (SSEAP) was extended in length and ran from January to September, 1974. A graduate student was hired early for this program to provide assistance to the Yukon Territorial Government with their student hiring program. The 1974-75, the student program involved contacting all post secondary Yukon students prior to their summer break. The majority then had employment arranged for them prior to their return to the Yukon. Three additional students were hired and they provided the necessary assistance during the busy summer months. The year-round program includes counselling and placement services, presentation of Creative Job Search Techniques (CJST) courses and participation in Career Days activities.

The Job Information Centre (JIC) concept was utilized throughout the year. Clients are now able to review details on vacancies and obtain information on service within a modern and attractive setting.

The immigration program was concentrated in the summer months with an immigration officer spending approximately two

weeks of each month in the area. The first nine months of the year were characterized by a high level of placement activity but the upward trend in the economy has been evident during the last three months. Placements for 1974-75 will be at record level but not as high as originally forecast due to the slower period.

Review of 1974-75

Northwest Territories

The Northwest Territories was serviced by fully autonomous Canada Manpower Centres (CMC) in the communities of Yellowknife, Inuvik and Frobisher. Full-time sub-offices were maintained at Fort Simpson and Hay River and itinerant Manpower services were provided as resources available at all other larger settlements in the Territories. A Manpower counsellor was assigned to the Strathcona Sound Project. A special staffing program was undertaken to staff one-third of all positions in the Territories with employees with native language capability. This was virtually accomplished by the end of the year.

The CMC of Yellowknife and its branch offices service about thirty settlements with a total population base of over 25,000. This CMC is responsible for approximately two-thirds of the area of the NWT — 1,304,903 miles or one-fifth of the area of Canada. The authorized staff was 18. Services of this CMC were largely directed toward the government offices in the capital of the NWT and the major mines in the Territories including two large gold mines in Yellowknife, and a large lead-zinc mine at Pine Point.

The CMC of Inuvik is responsible for an area of approximately one-sixth of the Territories and services about 12 settlements with a combined population of over 8,000 people. Seven staff members were primarily concerned with activity generated by petroleum exploration and activity concerned with the Mackenzie Highway.

The CMC of Frobisher is also responsible for about one-sixth of the area of the NWT. Approximately 24 settlements with a combined population of over 10,000 people received service as resources permitted. The staff of three are concerned primarily with the Government offices in the Baffin Region, a hunting and trapping economy and the developing new lead-zinc mine at Strathcona Sound.

The Department is establishing a permanent economic analysis capability for the Northwest Territories. The Economic Analysis and Forecasts Branch first established a District Economist office in Yellowknife in May 1973. The office now consists of a District Economist and a Statistical Research Clerk, and is likely to be expanded as needs are identified.

The major services presently provided by the District Economist's Office is an annual, Outlook in which economic development and human resource trends for subsequent years are identified, and in which strategies for human resource development and utilization are proposed. Other services include the collection, analysis and dissemination of labour market data, and other statistical data which is relevant to human resource policy.

Over 9,000 worker clients registered with Canada Manpower in the Northwest Territories in 1974-75. Of these, over 6,000 persons were referred to known job vacancies, and over 2,900 workers were placed in employment. Over 20,000 counselling interviews were held, plus over 600 counsellor visits to employers' premises.

Canada Manpower Training Program

Yukon

The CMC continues to support and be involved in virtually all vocational courses offered by the Yukon Vocational and Technical Training Centre. Special emphasis is placed on Basic Training for Skill Development (BTSD) courses in outlying communities. These courses are primarily for the native population and acceptance of graduates is actively promoted by CMC — Whitehorse.

Our Canada Manpower Industrial Training Program (CMITP) has proven very successful in upgrading the workforce and assisting in alleviating the shortages of skilled workers in the Yukon. Trainees are upgraded and trained within the industrial setting through CMITP. Most major and many smaller employers are accepting and sharing the responsibility for the introduction and upgrading of these lesser skilled workers into their labour force. Over 1,000 trainees were enrolled with our contribution exceeding \$460,000. Most contracts were with the mining industry — approximately 500 trainees for \$200,000 and the transportation industry with 450 trainees for \$185,000.

Northwest Territories

On October 30, 1974, the Government of Canada and the Northwest Territories entered into a new agreement on the Canada Manpower Training Program. The agreement emphasizes the basic principle that Manpower Training Programs can only be fully effective when there is the closest consultation and cooperation between Canada and the Territory in the planning and carrying out of activities within their respective jurisdictions. The development of effective training programs with industry will be encouraged and stimulated by Canada and the Territory. The planning of training activities within the terms of this agreement is a major function of the Manpower Needs Committee.

During 1974-75, the Department purchased 50,000 training days under the CMTP agreement. This represents approximately 754 training spaces including 310 places in 13 different occupational skill programs; 326 people were enrolled in Basic Training for Skill Development and Basic Job Readiness programs. The apprenticeship program had 118 participants. In addition, 54 Canada Manpower Industrial Training contracts were entered into with employers providing training opportunities for 173 persons.

Canada Manpower Mobility Program

Yukon and Northwest Territories

Workers were assisted under the Canada Manpower Mobility Program to explore or relocate to jobs away from their place of residence, to accept temporary jobs in other areas or to travel to Canada Manpower Centres to take advantage of services not available in the worker's home area. Mobility assistance was also paid to trainees who were required to travel to training centres.

During the fiscal year 1974-75, 47 relocation grants, 10 exploratory grants and 192 trainee travel grants were authorized to workers in the Northwest Territories. In the same period, 10 relocation grants, 12 exploratory grants and 88 trainee travel grants were authorized to workers in the Yukon Territory.

Job Creation

Yukon

There were 18 Local Initiatives Program (LIP) projects in the Yukon Territory for the winter of 1974-75. Of these, 11 were designated as "early starts" enabling the

projects to more closely deal with local conditions. The LIP contribution to the 18 projects amounted to \$281,535. Some 118 jobs (2,052 manweeks of work) were created in a variety of construction repair, recreational and community service activities. The latter category included two childcare centres and a project enabling school children to participate in museum tours.

The 1974 Opportunities For Youth (OFY) Program funded seven projects with a total federal commitment of \$18,325, creating summer jobs for 29 young people in the following communities: Carcross, Destruction Bay, Fisheye Lake, Pelly Crossing, Watson Lake and Whitehorse.

Two Local Employment Assistance Program (LEAP) projects are currently operating in the Yukon Territory, both in Whitehorse. The Yukon Association for Children with Learning Disabilities in its second year of operation under LEAP has created 900 manweeks of work with a federal commitment of \$181,112. The project provides employment and training to unemployed persons as remedial tutors in Yukon elementary schools. The Yukon Association of Non-Status Indians with a LEAP contribution of \$93,575 engaged previously unemployed non-status Indians (520 manweeks of work) in the production of freighter canoes, sleighs, toboggans and snowshoes.

Northwest Territories

During this fiscal year, a permanent office was opened in Yellowknife to administer the Local Initiative Program, the Opportunities for Youth Program and the Local Employment Assistance Program.

This year, 33 LIP projects employed over 240 people in the Territories with an expenditure of funds in excess of \$500,000. The projects covered handicraft industries, repairs and renovations to existing buildings, educational and nutritional projects, and research and cultural projects.

Also, 28 OFY projects were funded across the Territories providing recreation and employment for many youth in the area with a federal contribution of \$178,000.

One LEAP project, under the name Qivat at Chesterfield Inlet, adapted Video Tape Recording (VTR) to preserve legends and record the present life style of the Inuit. This program also trained native people in the operation of VTR equipment.

Special Programs

Yukon

The success of the Yukon Outreach Program has proven very beneficial to the Yukon people. Our Outreach Project is enabling us to extend CMC services, activities and programs to the various communities throughout the Yukon. Management and administration staff of Outreach are located in Whitehorse and resident workers are located at Whitehorse, Carmacks, Ross River, Mayo, Dawson City, Haines Junction, Teslin, and Watson Lake.

The workers have been able to devise programs and suggest solutions to problems within their particular community. These workers have been able to reach people whom the CMC could not, although CMC counsellors did visit every Yukon community at least once during the year. There is good liaison and close cooperation and co-ordination with community representatives and public agencies such as the RCMP, Public Health, Social Welfare, Education and local Indian Bands.

Outreach workers have provided considerable assistance in staffing Local Initiatives Programs in the various communities. They have also been asked to assist in the hiring for all Territorial Government contracts outside the Whitehorse area. Knowledge of local situation and labour market information is regularly relayed to the CMC and this information has been of considerable value, as in some cases it would not ordinarily have been available.

Northwest Territories

During the 1974-75 fiscal year, three new Outreach projects were initiated, developed and established in the Northwest Territories. As of the end of the fiscal year there were four Outreach projects operational at the following locations: Tuktoyaktuk, Fort Good Hope, Ft. Liard, and Fort Resolution. The expenditures in Outreach projects provided for salaries and operating budgets for the four Outreach workers.

These projects are significant in that they provided an employment service to areas which were geographically and culturally isolated from regular service available from Canada Manpower Centres in the NWT. Expectations are that these projects will become instrumental in identifying community employment needs which will be interpreted in terms of training and job creation

programs and services required which will provide for these needs.

Some inroads were made towards developing a delivery service attuned to special needs people. Discussions were held with various organizations to determine interests, commitments and methods of providing a more integrated service to these clients.

Community Employment Strategy

On January 15, 1975, the Minister of Manpower & Immigration and the Commissioner of the Northwest Territories signed a letter of understanding regarding the implementation of a three-year developmental phase of a Community Employment Strategy for the Northwest Territories.

This phase will be directed to assisting people who experience particular and continuing difficulty in finding and keeping satisfactory employment, and who therefore tend to rely for most or all of their income on some form of transfer payment.

The improvement and better co-ordination of existing employment and related services and programs will be an important objective of the developmental phase.

Plans for 1975-76

Northwest Territories

Consideration is being given to increasing the level of services in the Northwest Territories by:

Upgrading the present branch CMC at Hay River to a fully autonomous office serving the Hay River and Pine Point areas.

Establishing a fully autonomous CMC at Resolute to serve the High Arctic region including the new mines at Strathcona Sound and Arvik.

Establishing a branch office at Fort Smith serve the Vocational Training Centre at Fort Smith and also the surrounding area.

Establishing a branch office at Norman Wells should activity on either the Mackenzie Highway or the Mackenzie Valley Pipeline warrant such action.

A minimum of three Outreach projects will be established in the Eastern Arctic.

Developing a work adjustment training capability proceeding from discussion stage with government and private agencies.

Developing Basic Job Readiness Training programs which will include elements of trainee support, counselling, agency and

ner supportive services in locations where sources permit.

Establishing a Territorial Director, giving re autonomy to manpower services in the North and a special voice in the Department on northern matters.

To modify the Creative Job Search Technique Program to the specific needs of the North.

To develop tests that are valid for people of native background.

Yukon

The Department intends to emphasize the extension of service to all areas of the Yukon and to:

Expand the scope of services through present programs and further development of itinerant service.

Examine possible ways to co-ordinate and integrate services to special groups or disadvantaged workers.

Continue development of the Outreach program with projects tailored to the needs of the community and special needs of the five Yukon people.

Ensure employers are aware of services available to them so they can obtain, train and upgrade staff. Continue to use CMITP wherever feasible to alleviate shortages of skilled workers. Utilize CMTP to upgrade workers in outlying areas and at the Vocational School in order to aid them in obtaining employment. Use CMMP to bring work-particularly the disadvantaged identified by Outreach workers to the CMC for testing and counselling.

Continue Service to Youth activities and arrangement of summer employment for Yukon students. Establish a separate CMC for students to operate during the summer months.

Establish a full-time Canada Immigration Centre in Whitehorse early in the spring of 1975.

Short-term Plans

Open a CMC in Rankin Inlet to serve the Inuvialuit and central regions.

Establish Outreach counsellors in all communities where such services are needed.

Bring the Community Employment Strategy to bear on the chronic problems of unemployment in the Arctic.

Increase the number of native counsellors, who would be better able to relate to the native population in their own languages.

DEPARTMENT OF NATIONAL DEFENCE (DND)

CANADIAN ARMED FORCES

Responsibilities

The objectives of the Canadian Armed Forces are:

- to support national policies by contributing to the safeguard of Canada's sovereignty —
- by conducting surveillance of Canadian territory, airspace and approaches;
- by reinforcing respect for Canadian territorial and jurisdictional authority;
- by providing aid to civil law enforcement agencies;
- by operating rescue and co-ordination centres, and by providing aircraft search and rescue services; and
- by assisting other government departments and civilian agencies in national support and development:
- to work for peace and security in the world in cooperation with our allies.

Policy and Plans

To meet these objectives as they apply to Canada's North the Department of National Defence is following the policy developed some years ago of equipping its forces so far as is practicable with materiel suitable for arctic conditions and then training and using these forces in actual northern operations. To this end, plans call for several different types of activities to be carried out each year:

Regular surveillance of northern land, sea and air space.

Northern deployments and exercises for land force units including airborne components.

Training cruises to northern waters for ships and submarines of Maritime Command.

Air transport and search and rescue missions in the North.

Assistance in northern engineering projects such as the building and improvement of northern airstrips.

In addition to these activities the Department recruits northern people for the armed forces and provides specialized education and training programs whenever required. Present policy also calls for a continuing review of all of these programs and activities and the introduction of additional ones wherever warranted. Northern Region Headquarters at Yellowknife plays an important role in co-ordinating northern operations and collecting information on northern requirements which Canadian forces might fulfil.

Review of 1974-75

Maritime Forces

As in previous years, Maritime Forces maintained a significant presence in Canada's Arctic. Sovereignty and surveillance flights, the deployment of ships into Arctic waters, search and rescue flights, flights in support of other government agencies, and training exercises continued. A permanent detachment has been established at Frobisher to support increasing Maritime Command activity above 60 degrees.

Until the reduction of operations in October, Argus aircraft maintained a minimum schedule of three 45-hour patrols a month, operating from bases at Frobisher, Edmonton, Yellowknife, Goose Bay, and Thule, Greenland. Approximately 1,300 hours were flown by Argus operating in the Arctic. Although the primary purposes of Argus flights were sovereignty protection and

surveillance, many were flown in support of other government agencies. During the ice-season all northern patrols carried MOT ice observers and conducted ice reconnaissance as a secondary task. Patrols were also assigned photographic tasks on behalf of DIAND, DOE and EMR, such as the investigation of off-shore oil exploration and drilling activity on the archipelago, and reporting on population movement. Scientists and observers from other government departments were frequently carried, conducting such activities as investigation of seabird and marine populations in the Beaufort Sea, and ice research along arctic shores. Maritime Forces also conducted remote sensing and communications trials in the Arctic. Much of the work was done in support of the government agencies.

In August, 1974, *HMCS Preserver*, *Assiniboine* and *Saguenay* deployed for six weeks into Arctic waters to conduct exercise NORPLOY 74. The destroyers accompanied *Preserver* into Hudson Bay, paid a Port Visit to Churchill, Man., and then returned to Halifax. Argus and Sea King helicopters operated in concert with *Preserver* throughout the deployment. Northern deployments are tasked to conduct surveillance, scientific communications trials, to assist in the replenishment of remote settlements, and to conduct special projects. Visits were made to Churchill, (where ships were met by the Minister), Chesterfield Inlet, Eskimo Point, Rankin Inlet, Parry Bay, Lancaster Sound, Dundas Harbour, Grise Fiord, Pond Inlet, Broughton Island, and Bay of Woe. In addition to scientists from DREP, DREC and CRC, a scientific team from Acadia University accompanied *HMCS Preserver*. During the deployment, *Preserver*, *Saguenay* and *Assiniboine* assisted with the salvage of

important scientific equipment from the *MV Minna*, which had grounded near Resolution Island during a storm.

Land Forces

The continuing series of sub-unit exercises, called NEW VIKING have gone on throughout the year. These exercises are designed to prepare ground forces for surviving and fighting in arctic conditions, summer and winter. Apart from providing an almost continuous military presence in the North, these exercises had, by the end of 1974, familiarized more than 6,500 officers and men with the geography, terrain, climate and operating difficulties of Canada's North. Two senior officers' serials held each year have ensured that staff officers and senior civilian officials are personally aware of the problem of operating in the North.

Headquarters and main support base for NEW VIKING are at Canadian Forces Station Churchill (CFS Churchill), which was activated on April 1, 1974 as the Northern Training Centre for the Canadian Forces. Although the defence facilities are located in the former military camp, all permanent residences will be located in Churchill as part of the Federal-Provincial construction plan. The Northern Training Centre is now responsible for conducting the NEW VIKING series of arctic training exercises and instructor courses, as well as providing support for major exercises involving the land forces and tactical air elements.

Advanced bases for NEW VIKING during the winter are established at such points as Baker Lake, Coral Harbour, Rankin Inlet, Repulse and Yellowknife. In the summer, they are transferred to Sachs Harbour, Repulse Bay, Isachsen, Rae Point, Eureka and Repulse.

In the western arctic Exercise READY NOW III, a Canadian Airborne Regiment exercise, took place in May 1974, with the regiment deployed on austere summer scales along the Alaska highway.

The Canadian Rangers continued to be available on a limited basis for functions such as coastal surveillance, to provide information and to help in search and rescue missions. No emphasis has been placed on recruiting of Rangers during 1974.

The northern airfield construction program continued in 1974 at three sites: Cape Dorset, Pond Inlet and Eskimo Point. In 1974, the responsibility for the airfields was taken over by the Ministry of Transport from the LAND. No 1 Construction Engineering Unit in Winnipeg had primary responsibility

for technical, logistical and administrative support of these projects. Airlift and re-supply was provided by Air Transport Command using CC 130 Hercules to move the heavy loads into the sites in the spring on ice strips, and Buffalo aircraft for weekly re-supply.

The 5^e Escadron du génie du Canada continued work on the 4,400 by 300 foot gravel strips at Cape Dorset and Pond Inlet. Cape Dorset is now 70 per cent complete with 50 per cent of the rock-cut done and it is hoped to have the strip finished by the end of 1975 construction season. Pond Inlet, about 35 per cent complete, suffered from equipment-down time and poor communications causing delays in the year's work. Project completion is now scheduled for 1977.

Construction on the Eskimo Point airfield was started in 1974 by One Airborne Field Squadron from Edmonton and carried on by Three Field Squadron from Chilliwack when the airborne unit left for duties in the Middle East. The runway, similar in size to the two others, is now 40 per cent complete and should be finished by the end of the 1975 construction season.

The 300 foot single span bridge over the Eagle River at Mile 237 of the Dempster Highway was scheduled to have construction start in August 1974. Road construction to the site was not completed and bridge construction is now scheduled to commence in August 1975. A joint DIAND/DPW/DND project is to be constructed by military engineers, the bridge is due for completion in July 1976. Contracts have been let for the bridge superstructure and sheet piling cribs. The design and specifications for the piles are out for tender and should be let by April 1, 1975.

The Canadian Forces Mapping and Charting Establishment carried out Field Survey Operation ARCTIC 74, covering the south-eastern portion of Baffin Island, from 1 June to August 17, 1974. The field party consisted of one officer and nine military surveyors, supported by four helicopters and 18 personnel from 430 ETAH. During the operation Horizontal and Vertical Control was established for 221 sheets of 1:50,000 scale mapping covering 69,600 square miles.

Air Forces

Air Transport Command activity in the North was similar to that for 1973. Hercules aircraft provided weekly air services and special flights as required to the Canadian Forces communications stations at Alert,

Inuvik, and the Northern Region Headquarters at Yellowknife. During the annual Boxtop airlifts, Hercules aircraft transported in excess of 200 loads of fuel oil and general cargo to Alert. Also, Buffalo aircraft were involved in support of the northern airfield construction program at Cape Dorset, Eskimo Point and Pond Inlet.

One Twin Otter aircraft is located at 440 Squadron detachment, Yellowknife and is utilized for communications and, as required, search and rescue in support of primary search and rescue aircraft.

During the period January 1 to 31 December 1974, there were five major searches above 60° which consumed 1,072 flying hours. All of the five searches conducted north of 60° during this period were successful.

CF5 tactical fighter aircraft of 433^e Escadrille tactique de combat, Bagotville and 434 Tactical Fighter (Operational Training) Squadron Cold Lake, Alberta, flew a variety of tactical support missions from northern airfields. These include Goose Bay, Labrador, Churchill and Yellowknife. In addition, CF5 long range photographic reconnaissance sorties were flown from southern bases, utilizing the air refuelling capability of Air Transport Command's CC137 Boeing aircraft. Aerial reconnaissance included many northern locations such as Watson Lake, Fort Simpson, Fort Providence and portions of the Alaska Highway.

The DEW Line, consisting of four main sites, seventeen auxiliary sites and a communications relay station continues to necessitate military presence in the Arctic. These military installations stretch from Cape Dyer on the east coast of Baffin Island to Komakuk Beach near the Alaskan Border. While all sites are operated by the United States Air Force, the airfields at Tuktoyaktuk and Cambridge Bay are operated by the Ministry of Transport.

The 402 (Reserve) Squadron utilizing Otter aircraft held a summer concentration in Yellowknife during June — July. In addition 438 Squadron had a deployment to the Fort Chimo area.

Plans for 1975-76

Maritime Forces

Plans call for maintenance of the present level of air and surface activity, consistent with the primary tasks and resources assigned to Maritime Command. Support to other government agencies will likely be increased, consistent with increasing

demands for information about, and surveillance of, the Arctic.

Land Forces

The NEW VIKING series of exercises will cease as currently conducted effective April 17, 1975. Northern training will be accomplished by each combat group conducting two company-size exercises annually, each of ten days duration, north of latitude 60°. Ten basic arctic courses similar to the NEW VIKING course will be held annually at CFS Churchill to cater for headquarters personnel, service battalions, militia, cadets, senior officers and the tactical air group. In addition, three advanced courses will be conducted annually for unit instructors at CFS Churchill.

Exercise PATROUILLE NOCTURNE III will be a 5^e *Groupeement de Combat* winter exercise in the Fort Churchill area in February 1976, with deployment being done by rail. 430 ETAH and 427 Squadron helicopters will also take part in this exercise.

In addition to the combat group exercises, the Combat Training Centre, Canadian Airborne Regiment and the 1st Canadian Signals Regiment will conduct winter exercises north of latitude 60° during 1975-76.

Work on the Eagle River Bridge will continue on August 1, 1975 and carry on throughout the winter.

Airfield construction at Cape Dorset, Eskimo Point and Pond Inlet will resume in March 1975. Cape Dorset and Eskimo Point airfields should be complete by the end of 1975 construction season.

Air Forces

Hercules aircraft will continue to provide regularly scheduled service to Alert, Inuvik and Yellowknife. Also Buffalo and Hercules aircraft will be used during the spring, summer and early fall to provide support for the northern airfield construction program. The Twin Otter at Yellowknife will continue to provide essential service to Northern Region Headquarters.

CF5 tactical fighters of 10 Tactical Air Group will fly operational training missions including photographic reconnaissance from several northern airfields in support of land forces exercises.

During the coming year, the Air Reserve Squadrons will be involved with summer camps at Yellowknife, Churchill and Goose Bay. In addition, two Otters will be utilized on a northern survey operation on Baffin Island and Southampton Island. Their support will include transportation and aerial photographic duties.

Defence Research and Development

On April 1, 1974, the Defence Research Board was reorganized with the resulting separation of its advisory and operational functions. The research establishments that had been operated by the Board were integrated into the structure of the Department of National Defence, with the Defence Research Analysis Establishment reporting to the Assistant Deputy Minister (Policy) and the other establishments to the Assistant Deputy Minister (Materiel) through a newly appointed Chief of Research and Development. The responsibility for providing advice to the Minister and to the Department as a whole on important implications of science and technology on the operations, equipment acquisitions and the research and development activities of the Department remained with the Defence Research Board. The Chairman/DRB retained a small staff to be concerned with long-term planning, development of research policies, evaluation and other studies as required. The Defence Research Board also retained responsibility for the University Grants Program and the associated Advisory Committee structure.

CHIEF RESEARCH AND DEVELOPMENT

Responsibilities

To bring to the Canadian Armed Forces scientific knowledge and experience in solving problems associated with military operations in high latitudes, and to sponsor and undertake research projects aimed at acquiring such knowledge.

Review of 1974-75

Research was conducted at CRAD's laboratories across the country; these studies are functional and multi-disciplinary. Because the broad work categories outlined above overlap in several of these laboratories the text that follows has been organized without continual reference and credit to the performing research establishment.

The following list is therefore presented to give some idea of the number of these involved and the general field of interest of each.

Defence Research Establishment Atlantic — (Arctic Acoustics).

Defence Research Establishment Valcartier — (Military Engineering, Remote Sensing).

Defence Research Establishment Ottawa — (Effects of the environment on operations in the North. Protection of the individual soldier, Remote Sensing, Military Radar and Communications).

Defence Research Analysis Establishment — (Operational Research).

Defence and Civil Institute of Environmental Medicine — (Protection of the individual soldier. The effects of the environment on operations in the North. Remote Sensing from the human engineering point of view).

Defence Research Establishment Suffield — (Military Engineering, Protection of the individual soldier).

Defence Research Establishment Pacific — (Arctic Acoustics).

Research in the North has also been supported by means of contracts to universities, non-government research organizations and, to a small degree, Canadian industry. Facilities and goods and services were provided to other government agencies and close collaboration was maintained with research and development agencies in other countries especially the United States, Great Britain and Denmark.

Research Directed to Protecting the Soldier and His Equipment

The work covered under this heading was concerned with improving certain aspects of clothing and physiological and immunological research.

Continued work on heated gloves with conducting rubber elements led to evaluation of gloves built around a conducting element made from 50 parts per hundred carbon black in natural rubber against standard cold weather mitts in a cold chamber at -35°F. The electrically heated gloves maintained index finger temperatures up to 15°C higher than standard gloves. However, the gloves as designed did not allow improved manual dexterity and a dual system using a very thin inner glove allowing high dexterity work plus the outer heated glove which would be used for rewarming hands is being considered.

The new design of parka hood reported on last year was evaluated at Churchill. Complete protection against frostbite was achieved and frosting was prevented at high wind chills. Slight fogging and frosting effects were still encountered at low wind chills. Subsequent modifications to allow better circulation in the hood overcame these last problems in later trials at Yellowknife. The hoods will be further modified to provide better venting to the exterior and increased peripheral vision in the visor and will be tested again in winter exercises in the Churchill area in the winter of 1975.

Work under the broad heading of protecting the individual has included further investigations of tent design to improve wind resistance, erection time as well as decreasing weight and stowage; and investigation of heat loss from clothing and tents.

The mobile shelter, a concept combining housekeeping and vehicle functions into one, was modified and configured as a medical evacuation unit and tested at Churchill in the winter of 1974. The concept, as such, is feasible and the small model showed that a light ambulance unit capable of evacuating three casualties can operate under northern winter conditions and provide the internal micro-climate and medical support atmosphere needed for casualty survival.

The continuing work on immunology in which serological examinations of blood samples from small wild mammals, birds and sentinel rabbits and chickens were made, showed antibody to St. Louis encephalitis virus in 10 to 20 per cent of small animals and birds from the Yellowknife area and antibody to California encephalitis virus in sentinel rabbits at Hay River and Inuvik. A parallel continuing study of sera collected from Canadian Forces personnel before and after Arctic exercises, and other activities such as surveillance, and airstrip construction for increase in antibodies to these and other pathogens known to occur in wild life did not provide evidence that unusual infections are likely as a result of exposure to this environment. This work will not be continued unless unexpected diseases are identified in studies being done at the University of Saskatchewan under a grant entitled, "Arbovirus Investigations in Tundra Communities Keewatin District, NWT." So far California encephalitis virus has been isolated from mosquito pools near Rankin Inlet.

In the field of physiology, a number of findings are of interest. Skin fold measurements made over a two-year period on subjects working hard in the Arctic in the cold show a depletion of body fat equivalent to 3.2 kg per man on the average even when the men under test were in caloric balance. It appears under these conditions fats are oxidized to ketones rather than through the citric acid (Krebs cycle) to CO_2 .

The ketone pathway produces only 25 per cent of the energy available through the alternate path. Field results were duplicated when subjects were put through a similar routine in a cold chamber where temperature, wind chill and work in the field were simulated. Since total body weight changes were minimal and the small loss of 0.5 kg

recovered by one week after the exercise, it is postulated that a build up of muscle occurs compensating for the lost fatty tissue. Further measurements of this type were made in February 1975 and the results will be reported on later in 1975.

Work was also done to investigate the effect of cold on sleep patterns. Subjects, after spending two nights sleeping in indoor conditions then spent 10 continuous nights in unheated tents at temperatures between -25°F to -38°F wired for EEG, EKG and skin and core temperatures. They wore thermal underwear and winter pyjamas. Marked alterations in overall sleep patterns were observed, and these changes followed predictions from work with animals. This work will be reported on during 1975.

The Vitamin C investigations planned for 1974-75 were to investigate slow release inputs of the dosages found to be effective in the early work. However, because of problems with the trial procedures this work will have to be repeated in 1975-76.

High altitude/cold studies continued at Mt. Logan. Two drugs diphenylhydantoin and sulfipyrazone were tested in a double blind manner with a placebo as aids in prophylaxis against the effects of altitude. In the single breath nitrogen-washout platelet study a concurrent drop in platelet count and occurrence of the detectable lung lesion suggested a relationship. Preliminary indications suggested that sulfipyrazone — a platelet inhibiting drug did reduce the severity of the subclinical lesion but the data was not statistically significant. Further data obtained from collected samples of serum, plasma and urine will provide solid statistical information detailing the interaction of such parameters as intake — output, body weight and urine electrolyte excretion and provide insight into the dynamics of extra- to intra-cellular electrolyte and fluid shifts.

During the work a daily clinical assessment was made of all subjects at Mt. Logan in an attempt to find common clinical signs of acute mountain sickness. Unsteadiness of gait has been one such recognized sign.

Effects of the Environment on Operations in the North

The work done under this heading is concerned with the effects of the environment on systems and machines used by the Canadian Forces as well as with the fundamental environmental parameters themselves.

Environmental Parameters

In 1974, an extensive data gathering expedition to Lincoln Bay completed the program of measurements aimed at securing data to construct models of the water structure, water dynamics and the dynamics of ice movement. The research site was closed at the end of the summer and all equipment removed. From previous data on water currents and limited tidal data, a model of water dynamics has been constructed which postulates the existence of Kelvin waves in a two layered channel system. The resulting vertical and lateral velocity distributions exhibit the prominent features of the observed near surface currents. The non-tidal oscillations observed in spectrum analyses of the water current data are conjectured to originate from internal oscillations of two interfaces, one at about 50 m depth and the other at 150 m depth.

Calculations of water, ice and heat flow through the channel based on previous measurements of temperature structure, water current and ice flow show that the annual flow of water through Nares Strait is approximately 2×10^4 cubic kilometres a year while heat flow is 2×10^{19} calories per year. Mean ice transport is of the order of 100 cubic kilometres a year. An explanation is also being sought for the origin of Baffin Bay deep water and of the semi-permanent polyna known as the North Water.

A reasonably good qualitative relation between ice velocity and water current and wind velocity is apparent from the data obtained prior to 1974 and analysed to date. It is hoped that the 1974 data when analysed will allow more quantitative treatment of ice movement to be made.

In 1975, tidal data will be obtained from a network of five tide gauges, four in Robeson Channel and one in Kane Basin to provide further answers on such factors as geographical influences on currents as well as further information on possible internal waves. No research ship cruises were made to the Arctic in 1974 and effort was expended in processing data obtained in the two previous years. Acoustic noise measurements in Northern Baffin Bay near Greenland indicate a nearly white noise background believed to be due to brash ice and iceberg debris floating on the surface. The general results suggest that such debris contributes significantly to the general background above, about 200 Hz in Baffin Bay. Recordings were obtained while a small iceberg

rolled over a short distance from the experimental receiver. A very high noise level was recorded for this event being +90 dB relative to 1 μ bar at 1 yard averaged over 40 seconds. Peak levels were higher and most of the sound energy was below 200 Hz. Events such as these probably contribute significantly to Baffin Bay noise levels below 200 Hz. Noise measurements using special air dropped recorders indicated continuous biological noise was the dominant noise source in the frequency range 300 – 3,000 Hz during June measurements in Barrow Strait, Foxe Basin, Hudson Strait and Northern Hudson Bay. The prime noise maker is thought to be the bearded seal whose breeding seasons is April to mid June. No such noise was obtained in July.

Remote Sensing

Considerable progress was made analysing sideways looking airborne radar (SLAR) imagery of sea ice and a paper was written on the applications and limitations of real aperture SLAR in gathering data on sea ice. Collaborative work interpreting SLAR imagery of ice in the Gulf of St. Lawrence took place with personnel of the United States Army Cold Regions Research and Engineering Laboratory. As part of the Space Lab Project a joint Canadian – U.S. report has been written.

The work on enhancement techniques for obtaining maximum information from ERTS-1 imagery continued. The contractor attempting to obtain textural information by analysing spectra across the four bands selected areas to work on where good unobscured imagery and ground truth existed and appraised the spectral and temporal information of the digital tapes supplied by the Canadian Centre for Remote Sensing for the areas selected. In early 1975, the contractor will attempt terrain classification in the selected areas using routines he had devised in 1974.

Further work on analysing laser profilometer data obtained during 1973 overflights of Nares Strait and polar ice resulted in development of new interactive analysis techniques which have now removed all aircraft motions leaving a trace of the ice profile to which high confidence can be attached.

The sensor suit for the Long Range Patrol Aircraft has been analysed against a set of possible mission profiles and recommendations passed on to Canadian Forces.

Future plans for work in remote sensing will see more emphasis in pre-processing

techniques and processing techniques to help cut down the load on the human interpreter. In the more immediate future new sensors will be evaluated and calibrated as they come along. Forward looking infrared is one such sensor.

Military Engineering

Further work with slurry explosives was aimed at evaluating their cost effectiveness compared to C4 for use in cratering. As well as being more economical to use, slurries are easier to load in the last hole and are safer to handle. Costs are 30 cents for slurries as against \$1.40 a pound for C4. Some of the current evaluation work included ditching with slurried explosives in non-frozen soils (completed), explosives for ice-blasting, production of ditches in frozen soils, cold weather effects on velocity-diameter curves and a study of commercially-available drilling equipment with emphasis on frozen soils, permafrost, ice and weak rock formations. In the summer of 1974 the following explosives: pelleted and cast RDX/TNT/Aluminum, pelleted TNT/Aluminum, (20%), pelleted TNT, Hydromex 210 commercial slurry, AN/FO, AN/FO containing 15 per cent aluminum powder and the low temperature slurry developed by CIL under contract were tested. However, comparison tests of the commercial slurry explosives with a standard military explosive as candidates for use in excavation in frozen ground have not been possible so far in the 1974-75 winter.

A considerable effort involving the human engineering analysis of the design requirements for the bridge of a large polar ice breaker was concluded and reported on in the year. The objectives of the study were to: reduce the probability of human error which might hazard the ship or accompanying ships; reduce or eliminate instances of excessive workload demands on the bridge complement; contribute to the ice breaking capability of the ship; maximize the utilization of the bridge complement. The study involved visits to and surveys of existing ice breakers during both ice breaking and escort work for the purpose of analysing operations; the construction of a full-scale mock-up based on the design philosophy evolving from the analysis; and finally a review and re-examination of the design philosophy in detail. A bridge layout is concerned with four major task areas, contact of the vessel, collision avoidance, navigation and management and safety of the vessel.

The final design recommended is that of a small wheelhouse or conning position

located on the top of a stepped or pyramided superstructure. This takes into account the importance of providing good visibility as analysis of ice breaker operations emphasized that unaided vision is the prime source of information for the ice breaking task. If vision of the area at the ships waterline is supplemented by close circuit television then the officer-in-charge can control the ship from one position without having to move about the bridge. Analysis of current designs and operations also showed that there is scope for improvement in the design of many items of bridge equipment and that there is great potential for the application of automatic techniques and on-board computing facilities to ice breaker operations.

Crew leisure time activities and facilities were investigated as part of the ship habitability study. Opportunities for self-improvement through education ranked high as did also exercise facilities such as a gymnasium. Movies, particularly current ones, live television, better libraries and a hobby shop were other requested facilities ranking high. Communication with home and families was an area cited for improvement. Better mail service as well as ability to call home were two possible improvements. There was also a strong desire for individual cabins.

In the continuing studies of low temperature primary batteries, the air cathodes developed for use in reserve primary zinc/air batteries were tested to determine their operational and unit stand life, as well as to determine if they met the more stringent requirements of mechanically rechargeable zinc/air batteries. The inexpensive carbon based cathodes were found unsuitable for use in mechanically recharged batteries. Work on amalgamated Ni-Ag cathodes as possible candidates for an electrically rechargeable zinc-air battery indicated a possible cathode life of 20 cycles which could be cut in half if a layer of sintered nickel were present on the surface next to the electrolyte. Work on the charge limiting step in lead-acid batteries at very low temperatures has shown that two dimensional nucleation and growth preceded and followed by diffusion through the electrode material controls the oxidation of PbSO_4 to PbO_2 .

Research on Communications

The feasibility of using the ANIK satellite in communicating with the High Arctic was investigated by a measurements program at Eureka, NWT. The work demonstrated that the ANIK system is able to support communication to areas in the High Arctic

approaching 81° . However, a significant increase in satellite power per channel is required to provide this service. Statistics of beacon detection using geostationary satellites were determined and a report written on this subject. The statistics indicated that the satellite would not be too effective when grazing angles were greater than 33° . A polar satellite would be required.

Protection of the Environment from Military Operations

A survey of the persistence of human faecal-borne bacteria was carried out in the tundra and bivouac areas employed by the Canadian Forces, at Fort Churchill, Manitoba, to determine if repeated concentrated usage of a site caused a hazard to health. Organisms indicative of human fecal-pollution were found to have survived near bivouac sites, in quite high numbers, over a portion of one winter and a summer. The bacteria penetrated the subsurface, but lateral migration was minimal. Potential water sources in the area of bivouac sites were found to be free of indicator bacteria. In contrast, the survey indicated that during the spring melt period, the possibility of run-off water in a bivouac area being fecally-contaminated was very high, although contamination could only be referred to as gross for 15 to 27 samples. Melt water samples collected remote from any known bivouac areas were essentially free of indicator organisms. Snow (tested as a source of drinking water) was found to be devoid of indicator organisms unless collected virtually from beside a latrine site, and in fact, appeared to be sterile.

These studies have shown that the hazard to health from open field latrines in the Canadian North is not very high, except during the spring melt period when drinking water collected near a winter bivouac area should be boiled or treated chemically.

Trials of various possible substitutes for banned persistent insecticides continued. A carbamate compound previously found effective against black flies was evaluated against mosquitoes.

Trials of spraying equipment which would cut down over spray and also be suitable in "ultra low volume" spraying techniques were also made and a number of pyrethrum compounds used as forest insect control chemicals were tested for their effects on biting flies again as possible non-persistent pesticides.

Work on design of non-aggressive grousers for tracked vehicles has led to the design of

an airfoil grouser. In soft ground tests this gave a marked decrease in terrain damage at acceptable losses in drawbar pull. Further testing is planned in 1975.

Plans for 1975-76

The research program carried out under the Chief, Research and Development is a continuing one and much of the work will be pursued in 1975-76. This is evident from references under the specific headings to plans for next year. However, emphasis does change as results of research are adopted and new problems tackled under the broad headings we have used to describe our research.

Research Contracts 1974-75

With McGill University for:

Research on field mobility, correlation devices and contact mechanisms.

Evaluation of terrain.

Vehicle mobility and trafficability.

Evaluation of high resolution SLAR imagery.

Sharing funding of an interdepartmental contract to study the North Water.

With B.C. Research Foundation for research on juvenile hormone analogue as an insect regulator.

With the University of Montreal:

To evaluate a carbamate black fly adulticide against mosquitoes and

to evaluate new types of spraying equipment.

With Bombardier Co. to evaluate optimum tractive elements for marginal terrain vehicles.

With Gould Manufacturing Company: To study expedient methods for improving low temperature charge acceptance in the lead-acid battery.

With Kenting Ltd. To provide data for specified Northern areas.

Special Grants

With the Arctic Institute of North America as part of a special interdepartmental grant to support library and bibliography services.

Long-term Plans

Research is conducted both in the laboratory and in the field. Almost every aspect of science is involved, and for convenience the work is categorized as follows:

Research directed to protecting the soldier and his equipment from the environment.

Research on the effects of the environment on systems used by the Canadian Forces to generate and transmit information necessary for command and control, and on the effects of the environment on the Canadian Armed Forces' ability to conduct operations in the North.

Research directed to the protection of the environment from military operations.

UNIVERSITY GRANTS 1974-75

Electrical Power Sources for Military Applications

Calgary

Electric power sources for remote unattended locations

Military Preventive Medicine

Manitoba

Colonization and egg diapause in *Aedes* mosquitoes

Waterloo

Juvenile hormone for mosquito control

Alberta

Digestive physiology of medically important insects

Memorial

Mermithid parasites of blackflies

Saskatchewan

Arbovirus investigations, tundra communities, Keewatin District, Northwest Territories

*Institut de microbiologie et
d'hygiène de Montréal*

Alberta

Toronto

Lakehead

Western Ontario

Waterloo

Manitoba

*Séroépidémiologie EBV dans une
population militaire*Synthesis of insect hormones: New
pesticidesStructure of mosquito sensory
receptorsBlack fly control by chemical
methodsNeural processing in the olfactory
system of biting fliesThe control of northern mosquitoes
by mermithid parasitesCold aerosols and ultra-low volume
mists for abatement of adult
mosquitoes**Military Land Transportation and Vehicle Engineering**

Royal Military College

Evaluation and stabilization of
highly compressible terrain for use
as V/STOL landing sites

British Columbia

Evaluation of terrain classifications

New Brunswick

Off-road route selection

Queen's

Stability of airfield and founda-
tion pads on muskeg

Carleton

Characteristics of air cushion
vehicle-terrain interaction**Military Engineering Research***Sherbrooke**Conversion de l'énergie éolienne en
énergie thermique*

Royal Military College

Water treatment plant waste
disposal

Queen's

Slurried explosives

Calgary

Stabilization of arctic sands

Calgary

Microstructural investigation of
frost action in building materials
and soils

Calgary

Temporary enclosures for the North

Calgary

Military equipment defroster

Royal Military College

Ultimate strength of reinforced
concrete slab and girder systems*Laval**Modules d'habitation préfabriqués
en ferrociment pour les régions
nordiques*

Alberta

Fundamentals of shipboard icing

Laval

Small space heaters for use under
arctic conditions

Calgary

Development of materials for engineering
construction in northern Canada

| | |
|---------|---|
| Toronto | Influence of diet composition and feeding pattern on cold tolerance in rats |
| York | Physical fitness and adaption to cold and altitude stresses |
| Calgary | Cold water immersion, arterial blood pCO ₂ and brain blood flow |
| Laval | Assesment of cold reactivity by autonomic nervous system responses |

Human Performance and Human Engineering

| | |
|----------|--|
| Waterloo | Human response to buffeting and vibration in snowmobiles and all terrain vehicles |
| Manitoba | Effect of adverse environmental condition on intellectual and perceptual processes |

Defence Aspects of Social Research

| | |
|---------|------------------------------------|
| Calgary | Waste management for cold climates |
|---------|------------------------------------|

Political, Economic and Strategic Studies for Defence

| | |
|-----------|--|
| Dalhousie | Operational research studies relating to the North |
| Laval | <i>La souveraineté et la défense continentale</i> |

Optical Surveillance Research

| | |
|---------------|---|
| Sherbrooke | <i>Détection à distance par radiométrie infra-rouge des sols et végétation</i> |
| Toronto | Development of an advanced form of laser fluorosensor for remote detection purposes |
| New Brunswick | Orientation problems with unorthodox imagery in air space systems |

Geotechnical Aspects of Defence Operations

| | |
|------------------------|---|
| Memorial | Iceberg cross-section echo |
| Laval | <i>Définition microdensitométrique de trois unités naturelles de la Péninsule Labrador Ungava</i> |
| Royal Military College | Thermal effects in permafrost |
| Memorial | Prediction of iceberg drift off eastern Canada |
| New Brunswick | Panoramic photography analysis on the analytical plotter AP/2C |
| Arctic Institute | Baffin Bay North Water Project |
| New Brunswick | Rectification and correlation of infrared imagery using the analytical plotter |
| McMaster | An investigation of beach characteristics in the Arctic |
| Laval | <i>Interaction de la glace avec les ouvrages offshore</i> |
| Queen's | Strength of frozen soils |
| Alberta | Slope stabilization in permafrost |

| | |
|----------|--|
| McGill | Thaw stability of permafrost |
| McGill | Water stress on an ice floe |
| McGill | Electrical properties of sea ice |
| Memorial | Stochastic analysis of ice-structure interaction |
| Laval | <i>Etude de permafrost dans la région de Schefferville</i> |
| Toronto | Geophysical applications of natural and artificial electromagnetic fields in the audio frequency range |
| Guelph | Pressure sphere anemometer for arctic use |

DEPARTMENT OF NATIONAL HEALTH AND WELFARE (NH&W)

MEDICAL SERVICES

Responsibilities

Through its Northern Health Activities, the Medical Services Branch of the Department of National Health and Welfare is responsible for developing total health care in the North. The Branch plays a dual role in providing health services to all northern residents, acting not only in its federal role but also in the capacity of provincial health departments in both Territories, the Territorial councils, however, enact health ordinances.

The Governments of the Yukon and the Northwest Territories have been assigned full responsibility for the operation of health insurance plans in the same manner as provincial governments elsewhere in Canada.

Yukon

Review of 1974-75

In 1974, the Community Health Auxiliary Program (CHAP) provided training by means of a 40-week apprenticeship and a follow-up two-week course. Five native workers were prepared for employment as Community Health Representatives.

This program provided for the selection of suitable workers at the local level by an Indian band, community group or, in some cases, by the community nurse.

A technical training program designed to increase the diagnostic skills and clinical acumen of nurses in isolated communities was provided at five universities, and four nurses from the Yukon were enrolled. In addition, two nurses participated in a nursing administration course, two attended a refresher course in midwifery, and two attended courses on tuberculosis and neonatal care.

Two regional staff members participated in an advanced winter survival course. In addition, survival kits were prepared for use by the operators of branch vehicles. A Regional Safety Committee was formed to promote occupational health.

Three dental therapists from the Dental Therapy School in Fort Smith, NWT will work in the Yukon. These dental therapists are all young native northerners who will be supervised by qualified dentists. Their presence will enable the Region to extend the volume of quality dental care and preventive education throughout the Territory.

Facilities Completed in 1974-75

Foss River — A nursing station was established.

Whitehorse General Hospital — A fire alarm system was installed, and a window replacement program was completed.

Watson Lake — Construction of a new cottage hospital was commenced, with completion expected by the end of the calendar year 1975.

Facilities Planned for 1975-76.

Pelly Crossing — Two units will be added to the existing Health Station trailer to upgrade it to Health Centre status.

Whitehorse — Yukon Manor will be renovated to accommodate the Yukon Regional Office.

Facilities will be constructed in downtown Whitehorse to accommodate Dental Health and Public Health offices.

The boiler room of the Whitehorse General Hospital will be enlarged to permit the installation of an additional boiler.

New transformers will be installed to upgrade the electrical capacity of the heating system.

Long-term Plans

Continual efforts will be made to develop an integrated system of health services that will meet the needs of the Yukon; to gain the maximum participation of Yukon residents in health activities such as participation in hospital advisory boards and health committees; to develop adequate levels of environmental health, and to encourage paramedical personnel training programs for communities that are receptive to the concept.

Northwest Territories

The Yukon Region was split off and the former Northern Region became the Northwest Territories Region on April 1, 1974. Certain support services continued to be provided to the Yukon Region by the Northwest Territories Region in the areas of property maintenance, construction, personnel, communicable disease control, budgeting and financial functions.

The Dental Therapy School at Fort Smith graduated eight dental nurse therapists in June 1974 and expects to graduate nine second-year students in 1975. Ten first year students are continuing their studies.

Community participation in health activities was further developed with the formation of lay advisory boards to the Cottage Hospitals at Edzo and Fort Simpson and with an increased number of health committees at other locations in the Northwest Territories. Some of the 10 settlements which now have health committees have been functioning for two years.

The Third International Circumpolar Health Conference was held at Yellowknife

in July 1974. The proceedings of the conference are to be published during 1975.

A survival course was held in the Mackenzie and Inuvik zones for personnel who may undertake emergency flights to enable them to obtain the maximum advantages from new survival kits which they carry on emergency flights.

Of 22 Community Health Auxiliary Program employees who underwent instruction during the year 1973-74, 15 who remained in employment in 1974-75 received upgrading instruction.

The school for the training of Certified Nursing Assistants continued to operate at Fort Smith.

The technical training program for nurse practitioners was continued, a total of 14 nurses from isolated posts in the Northwest Territories participated at the Universities of Alberta, Manitoba and Western Ontario. In addition, three nurses received postgraduate nursing training, two at Dalhousie to obtain the diploma in outpost nursing and one at the University of Alberta to obtain the Bachelor of Science degree in Nursing.

As a result of publicity arising from a misinterpretation of the contents and conclusions of the de Villier's Report of 1969, relating to arsenic in the environment around Yellowknife, a new survey was initiated to determine and publicize the current levels of arsenic to which persons in the locality are subjected and to attempt to ascertain whether there is any evidence of illnesses which could be attributed thereto. The Departments of National Health and Welfare and Environment Canada, the Government of the Northwest Territories and the Yellowknife Municipal Government are cooperating in the survey which is being extended into environmental conditions on a broad scale.

Northwest Territories 1974-75 Capital Program

Baffin Zone

Frobisher General Hospital — A new combination general waste/pathological incinerator was installed. Expansion plans were developed for renovations and additions to modernize and more adequately accommodate most hospital departments, especially stores, dental offices and the out-patient department.

Pangnirtung — A new nursing station was completed. A residence was prefabricated for installation in the summer of 1975 for the use of dental therapists.

Pond Inlet and Cape Dorset — Residences were prefabricated for installation in 1975 for the use of dental therapists.

Inuvik Zone

Inuvik General Hospital — A new paediatric department and out-patient expansion was completed. Kitchen renovations were 90 per cent complete at year end.

Sachs Harbour — A prefabricated nursing station was serviced by a resident nurse.

Keewatin Zone

Baker Lake — A prefabricated residence was purchased for delivery in 1975 for use by a dental therapist.

Mackenzie Zone

Edzo — Cottage Hospital was completed.

Cambridge Bay — A prefabricated residence for nurses was occupied, and the nursing station was renovated and expanded.

Holman Island, Fort Wrigley and Pelly Bay — New diesel electric emergency power plants were installed at these nursing stations.

Snowdrift — A sewage disposal unit was constructed for installation in 1975.

Capital Construction Plans — 1975-76

Baffin Zone

Frobisher General Hospital — This will be the first year of a two-year construction program for upgrading and expanding of the isolation, paediatrics, out-patient, dental, public health, stores, garage, dietary, laboratory, pharmacy and accounting and administration departments.

Igloolik — Construction of a new nursing station will commence with conversion of the existing trailer station to a dental facility.

Pond Inlet } Installation of dental therapists'
Cape Dorset } residences are planned.
Pangnirtung }

Strathcona Sound — The Department will assist in developing a health facility for the new mining community.

Resolute — Planning will commence for replacement of the nursing station in the new settlement.

Hall Beach — A diesel-electric emergency power-plant will be installed in the nursing station.

Clyde River } The boilers in the nursing
Broughton Island } stations will be replaced and
the mechanical systems will
be modified.

Inuvik Zone

An emergency plant installation program for Zone nursing stations will proceed.

Inuvik General Hospital — Kitchens will be completely renovated.

Fort Franklin — A prefabricated residence will be installed to accommodate visiting physicians and support staff.

Norman Wells — Plans will be developed and the site prepared for construction of a new nursing station.

Keewatin Zone

An emergency power plant installation program for all remote facilities will be commenced.

Baker Lake — A prefabricated residence for a dental therapist will be installed.

Chesterfield Inlet — A triple unit prefabricated nursing station will be established.

Eskimo Point — Planning and site work for new nursing station will be initiated.

Mackenzie Zone

An emergency power plant installation program at various nursing stations will proceed.

Lac La Martre — A prefabricated health-station will be established.

Fort Rae — The existing residence will be converted to a health centre.

Spence Bay — The nursing station will be expanded to more adequately accommodate the public health and dental programs.

Long-term Plans

Continual efforts will be made to develop integrated systems of health services that will meet the general and peculiar needs of the people of the several geographical zones of the Northwest Territories; to gain the maximum participation of Northwest Territories residents in health related employment and voluntary activities such as participation in hospital and cottage hospital advisory boards and in community health committees; to develop adequate levels of environmental health, and to encourage paramedical personnel-training programs for communities that are receptive to the concept.

HEALTH PROTECTION BRANCH

Non-Medical Use of Drugs Directorate

Responsibilities

The Directorate is concerned with physical, mental, and social health problems

associated with the non-medical use of mood-altering substances. The term, mood-altering substance is defined to include alcohol, tobacco, licit and illicit substances.

In specific terms, the objectives of the Directorate are:

- to achieve lifestyle conditions consistent with physical, mental, and social health;
- to prevent problems associated with the use of mood-altering substances;
- to cure acute and long-term problems associated with the non-medical use of mood-altering substances;
- to restore casualties of non-medical drug use to physical, mental, and social health.

Part of our activities include articulation and dissemination of program concepts and methods, initiation of steps to achieve their effective use in current practice, and promotion and stimulation of the adoption of effective means of prevention, treatment, and rehabilitation. These activities are often carried out with the assistance of extramural agencies which are supported by contributions from the Non-Medical Use of Drugs Directorate.

Review of 1974-75

During 1974-75, two projects were supported in the North in the amount of \$58,500, one as a "Detox" and Rehabilitation centre in Yellowknife and one to a drop-in centre for young residents of Cambridge Bay.

Plans for 1975-76

Support to the centre in Yellowknife will continue this year and a number of other projects are currently under consideration or in the development stages. In addition, a summer program involving some 20 local students, at a cost of approximately \$40,000 is undertaking a number of projects dealing with native alcoholism and community development in the North.

Long-term Plans

Increased effort will be made to develop projects dealing with native alcohol problems and community development.

Health Programs Branch

Responsibilities

To make accessible high quality health services to all residents of Canada regardless of their place of residence or ability to pay. The Branch administers the Hospital Insurance and Diagnostic Services Act (implemented in 1958) and the Medical Care

Act (implemented in 1968) which enable the Federal Government to contribute, on the average, half of the costs of the insured services of the national programs which are incurred by provincial and territorial hospital insurance plans and medical care insurance plans which meet certain specified criteria of the federal legislation. These criteria are:

comprehensiveness of the insured services,

universality of the coverage which must be provided under equal terms and conditions to all eligible residents,

portability of the coverage when an insured person is temporarily absent or moving to another province or territory, and

administration on a non-profit basis by a public authority.

The federal legislation gives each province and territory considerable leeway in determining the administrative arrangements for the operation of its plans, in deciding how its share of costs will be financed (e.g. through premiums, sales tax, other provincial revenues or by a combination of methods), in deciding whether coverage will be on a voluntary or compulsory basis and whether or not services additional to those of the national programs will be included in the provincial plans. Any additional benefits are, of course, not eligible for cost-sharing.

In 1974-75, the Federal Government contribution is estimated at \$1,972 million as its share of the provincial and territorial hospital insurance plans. The federal contribution to the Yukon is estimated at \$1.37 million or 67.6 per cent of the cost of insured services of the national program covered by the Yukon Hospital Insurance Plan. The corresponding figures for the Northwest Territories Hospital Insurance Plan are estimated at \$3.2 million or 47.3 per cent.

In 1974-75, the Federal Government contributed approximately \$731 million under the Medical Care Program as its share of the provincial and territorial medical care insurance plans. The estimated federal contribution to the Yukon for costs incurred by the Yukon Health Care Insurance Plan in 1974-75 is \$643,000 or 48 per cent of the costs of insured services. The corresponding figures for the Northwest Territories Health Care Plan are \$1,202,000 or 48 per cent.

The Branch is also responsible for the management of the Health Resources Fund,

which was established in 1966 in the amount of \$500 million to be spent over the following 15 years to assist the provinces in meeting the national needs for new and improved facilities for the education of health manpower and for health research.

Another major responsibility is the administration of an expanding program of health contributions for research, and innovation in methods of delivery of health care. The Branch also has a major health economic and statistics division which provides economic and social research support for health policy planning and development. Consultant services are also provided by the Branch to the provinces and territories when required both in connection with the operation of their health insurance plans and also to assist them in planning and implementing changes in their health care delivery systems.

Review of 1974-75

There was a substantial improvement in the eligibility and portability provisions of the provincial and territorial hospital and medical care insurance plans. The Federal Government continued to discuss with the provinces ways and means of improving flexibility in the federal-provincial arrangements with particular emphasis on promoting a more efficient and economic health care system. The Health Economics and Statistics Division has set up a medical care data bank to provide uniform data relating to the operations of the medical care program to enable federal and provincial and territorial governments to carry out program evaluation and program planning. A community health program has undertaken the responsibility for developing, in collaboration with provincial governments, voluntary health and other agencies, community-based programs in areas of health promotion and health services, which would contribute to high standards of personal health and ready availability and accessibility of comprehensive community health services.

Plans for 1975-76

The provision of financial support to the provinces and territories, consultant services, advisory and research support will be continued. The Federal Government will contribute for the functional planning project in the Health Sciences campus in Yellowknife.

Long-term Plans

Further integration of the major health services and continued work in developing alternatives to reduce the growth rate of high cost services in return for the extension of cost sharing in lower cost alternative services.

Canada Pension Plan

The objective of this program is to provide basic income protection to all Canadians and to pay benefits to eligible participants who are retired, disabled or survivors of eligible participants.

Benefit payments for the fiscal year 1974-75 were:

| | |
|-----------------------|-----------|
| Yukon | \$265,000 |
| Northwest Territories | 193,000 |
| | 458,000 |

The continuing responsibility for 1975-76 and for long-term plans is the same, namely, the payment of Canada Pension Plan Benefits.

Income Security Branch**Family Allowances**

New legislation came into effect on January 1, 1974. Under this legislation Family Allowances are to be paid in respect of children under 18 years of age, living in Canada and maintained by parents or guardians. At least one of the parents must be a Canadian citizen, a landed immigrant, or a non-immigrant who has been admitted to Canada for a period of not less than one year and whose income is subject to Canadian income tax. The new Family Allowances Act replaces the former Act, the Youth Allowances Act and the Family Assistance Grants.

The monthly payment in 1974 for Family Allowances was \$20 per child and the rate in 1975 will be \$22.08 due to increases in the cost of living as provided by the Act. A province may vary allowances paid in that province in accordance with the age of the child or the size of the family, or both, provided the monthly allowance for each child is not less than 60 per cent of the federal norm and the amount paid for all children in that province averages the amount of the federal norm.

As of March 31, 1975, Family Allowances were paid in respect of 7,759 children in the Yukon representing 3,536 families and 18,878 children representing 7,166 families in the Northwest Territories. The dollar expenditures for 1973-74 as well as

| | 1973-74 Actual | | 1974-75 Forecast | | 1975-76 Forecast | |
|-------------------|-------------------|-------------|---------------------|-------------|---------------------|-------------|
| | YT | NWT | YT | NWT | YT | NWT |
| Family Assistance | \$ 1,436 | \$ 1,496 | — | \$ — | \$ — | \$ — |
| Youth Allowances | 38,476 | 63,990 | — | — | — | — |
| Family Allowances | 964,578 | 2,383,398 | 1,901,181 | 4,651,777 | 2,006,939 | 5,017,341 |
| Total | \$1,004,490 | \$2,448,884 | \$1,901,181 | \$4,651,777 | \$2,006,939 | \$5,017,341 |

the forecast expenditures for 1974-75 and 1975-76 are shown in the table below.

Income Security Branch**Old Age Security**

The Old Age Security Act provides for payment of a basic pension to everyone who has reached age 65 and who has fulfilled the residence requirements. The Act also provides for a guaranteed income supplement (GIS) which may be added to the basic pension in the case of pensioners who have no other income or only a limited amount. The supplement is paid for a fiscal year, normally on the basis of a pensioner's income in the preceding calendar year. Income for supplement purposes is computed in accordance with the Income Tax Act. The maximum supplement is reduced by one dollar for every full two dollar monthly income over and above the basic pension.

In April 1973, the basic Old Age Security pension was increased to \$100 a month and

Old Age Security Act provided for quarterly rather than annual escalation of Old Age Security and Guaranteed Income Supplement benefits on the basis of the cost of living. The first quarterly increase in October 1973 raised the basic pension to \$105.30 and the maximum monthly supplement to \$73.86 at the single rate and \$65.60 each for married pensioners. By January 1975, the basic pension had increased to \$120.06 and the maximum supplement to \$84.21 for a single person or a married person whose spouse was not a pensioner and to \$74.79 each for married pensioners.

In March 1975, in the Yukon, there were 541 Old Age Security pensioners, of whom 311 or 57.48 per cent were also receiving a supplement. In the Northwest Territories, there were 982 Old Age Security pensioners of whom 775 or 78.92 per cent were also receiving a supplement. The payments made during the year 1973-74 and the forecast of payments for 1974-75 and 1975-76 are shown in the table below.

| | 1973-74 Actual | | 1974-75 Forecast | | 1975-76 Forecast | |
|------------------------------|-------------------|-------------|---------------------|-------------|---------------------|-------------|
| | YT | NWT | YT | NWT | YT | NWT |
| Old Age Security | \$639,251 | \$1,106,161 | \$780,382 | \$1,375,218 | \$896,954 | \$1,584,345 |
| Guaranteed Income Supplement | 293,009 | 696,579 | 255,569 | 691,846 | 293,746 | 797,055 |
| Total | \$932,260 | \$1,802,740 | \$1,035,951 | \$2,067,064 | \$1,190,700 | \$2,381,400 |

the maximum Guaranteed Income Supplement to \$70.14 a month for a single person or a married person whose spouse was not a pensioner and to \$62.30 a month each for a married couple where both were pensioners. In September 1973, an amendment to the

National Welfare Grants**Family Planning**

The objective of the Federal Family Planning Program is to ensure the accessibility and availability of family

planning services to all Canadians who want them. The program of the Family Planning Division, which was created in 1972, includes the purchase, publication and free distribution of literature on family planning and sex education; the provision of consultation on family planning matters to provincial, territorial and municipal departments of health, welfare and education, and to a broad range of non-governmental agencies; assistance in the training and education of health and welfare personnel; and the administration of a family planning grants program.

During 1974-75, family planning and sex education literature was sent to communities in the Yukon and Northwest Territories. A family planning pamphlet in western orthography was developed and printed by the Northwest Territories Family Planning Association with funds provided by the Family Planning Division.

Fitness and Amateur Sport Program

Northern Games

The Northern Native Games were held at Tuktoyaktuk on the shores of the Beaufort Sea in the Northwest Territories. The Games bring Indians, Eskimos, and Métis together for friendly competitions, cultural and social activities.

Yukon Native Brotherhood Activities

Recreation Canada granted a contribution to the Yukon Native Brotherhood for 1974-75. Activities supported through this contribution were developmental in nature, inter-band, regional, provincial, and fell into the following categories:

- inter-band¹⁴, sport and recreation events,
- leadership development clinics and seminars,
- skill teaching or training clinics,
- consultative and technical services,
- regional and provincial competition of a developmental nature leading to integration into all Canadian competitive events.

Social Allowances and Services Branch

The Canada Assistance Plan

The Canada Assistance Plan was enacted in 1966 to support the integration, broadening and improvement of the public assistance

programs of the provinces and territories and their municipalities, and to encourage the extension and development of welfare services. Under the plan, contributions amounting to 50 per cent of shareable costs are made toward provincial, territorial and municipal expenditures for public assistance and welfare services.

The Canada Assistance Plan has two primary objectives: to help provide adequate assistance to persons in need, and to encourage the development and extension of welfare services intended to prevent and remove the causes of poverty and dependence on public assistance. All provinces and territories have signed agreements under Part I (General Assistance and Welfare Services).

In addition to the cost-sharing arrangements, the Canada Assistance Plan makes available to the provinces and territories, at their request, consultant services in areas such as income support, day care, child welfare, institutional care, community development and work activity. The Day Care Information Centre which was created in 1972 provides information on all aspects of day care to any interested person.

Payments under the Canada Assistance Plan to the Yukon Territory

| 1973-74 Actual | 1974-75 Estimate | 1975-76 Forecast |
|-------------------|---------------------|---------------------|
| \$762,921 | \$740,320 | 2,000,000 |

Payments under the Canada Assistance Plan to the Northwest Territories

| 1973-74 Actual | 1974-75 Estimate | 1975-76 Forecast |
|-------------------|---------------------|---------------------|
| \$1,372,984 | \$6,090,965* | \$2,580,000 |

* Payments made during 1974-75 include claims for prior fiscal years.

Vocational Rehabilitation of Disabled Persons Program

The Social Allowances and Services Branch also administers the Vocational Rehabilitation of Disabled Persons (V.R.D.P.) Program. The Federal Government, through this program, shares the cost with the Yukon and Northwest Territories of providing vocational rehabilitation services to persons who, because of physical

or mental impairment cannot work. Such services may include counselling, assessment, training and job placement. There is also provision for a maintenance allowance on an individual needs basis while the disabled person is receiving these services.

During the year, the Branch also provided consultative services to the Territories in the development of their rehabilitation programs. The development of an alcohol treatment and rehabilitation centre in Yellowknife was discussed, and certain costs have been accepted for cost-sharing, but not yet claimed by the territory. The utilization of the V.R.D.P. Program is expected to increase in the coming year.

During the 1974-75 fiscal year, the Federal Government reimbursed the Northwest Territories for expenses incurred under the V.R.D.P. Program in 1972-73. Claims have not yet been received for expenses incurred in the following fiscal years.

Payments under the Vocational Rehabilitation of Disabled Persons Program to the Northwest Territories

| 1973-74 Actual | 1974-75 Estimate | 1975-76 Forecast |
|-------------------|---------------------|---------------------|
| | 11,270 | 100,000 |

Although the Yukon Territories signed an agreement under the Vocational Rehabilitation of Disabled Persons Act in February, 1971, no claims for expenses incurred in providing rehabilitation services have been made. It is expected that the Territory will submit claims to the Federal Government for reimbursement during the fiscal year ending March 31, 1976.

Payments under the Vocational Rehabilitation of Disabled Persons Program to the Yukon Territory

| 1973-74 | 1974-75 | 1975-76 Forecast |
|---------|---------|---------------------|
| — | — | \$70,000 |

Blind and Disabled Persons Allowances

Under the Blind Persons Act, 1951, and the Disabled Persons Act, 1954, the Federal Government shares in the cost to the Territories of providing assistance to blind and disabled persons, aged 18 and over, who meet certain income and residence requirements. However, the Yukon and Northwest

Territories have ceased to accept applications under these programs and have transferred recipients who can qualify on the basis of a needs test to their more comprehensive general assistance programs which are cost-shareable under the Canada Assistance Plan.

**Federal Payments under the Blind
Persons Allowances**

| | 1973-74 | 1974-75 | 1975-76 |
|--|---------|----------|----------|
| | Actual | Estimate | Forecast |

| | | | |
|-----|----------|----------|----------|
| NWT | \$14,768 | \$ 6,367 | \$ 4,000 |
| YT | \$ 1,912 | \$ 225 | — |

**Federal Payments under the
Disabled Persons Allowances**

| | 1973-74 | 1974-75 | 1975-76 |
|--|---------|----------|----------|
| | Actual | Estimate | Forecast |

| | | | |
|-----|----------|---------|---------|
| NWT | \$11,799 | \$6,120 | \$5,000 |
| YT | \$ 1,912 | \$ 825 | — |

DEPARTMENT OF NATIONAL REVENUE

CUSTOMS AND EXCISE

Responsibilities

To administer the customs and excise laws and regulations, particularly with reference to customs control over movement of aircraft, vessels and goods into and out of Canada.

Review of 1974-75

The local Port of Whitehorse under the review of the Regional Collector, Vancouver, continues to administer customs laws and regulations throughout the Yukon Territory. Since this territory is serviced by a modern transportation media engaged in the importation and exportation of goods as well as international movement of passengers, Customs outposts were maintained at Fairview Creek, Carcross, Dawson, Old Crow and Pleasant Camp to accommodate this traffic. Customs formalities at Old Crow are performed by the RCMP. Service was provided at six locations approved as customs reports of entry in addition to highway clearance warehouse at Whitehorse and Dawson. Special arrangements were made to accommodate river traffic leaving and re-entering Canada on the Yukon-Porcupine river route.

The port of Edmonton provides service to reporting station for aircraft at Yellowknife, NWT on 72 hours notice and now maintains a permanent outpost for enforcement purposes at Inuvik, NWT. Service at Yellowknife is performed by officers from Edmonton on an "on call" basis. The RCMP continue to provide service at Frobisher, NWT under the jurisdiction of the Port of Goose Bay, Newfoundland, which is administered by the Area Manager of St. John's.

Service at this location is restricted to passenger and outwards reports only.

During the year, exploration activities of a commercial nature involving development of oil and mineral resources and of a non-commercial nature, such as geographical and mountaineering expeditions increased. Oil exploration activities and increased cargo deliveries into northern areas required closer surveillance by customs personnel. Surveillance is dictated by the need to protect the revenue with respect to imported goods and to assess the adequacy of reporting and accounting procedures. Officers from the Port of Edmonton continue to make several journeys into the Territories to examine these aspects of the Department's interest.

There was a continuing increase in maritime cargo deliveries during the year. The main shipping activity involves delivery of oil exploration supplies as well as resupply of petroleum products and bulk cargo to various locations in the territories, especially to the islands in the Arctic Archipelago. The number of vessels engaged in various cargo movements has increased and Ministry of Transport icebreakers continue to be active in this area during the sealift operations. The co-operation of the RCMP and other government agencies performing Customs enforcement functions for this department proved an invaluable asset. In providing the required service in 1974, the military commanders at Cape Parry and Hall Beach were appointed Acting Customs and Excise Officers.

Locations for customs service in the North, other than at the places described above, under the jurisdiction of the Ports of Whitehorse, Edmonton, and Goose Bay are tabulated below under the headings of the government department or service whose employees perform the duties.

Royal Canadian Mounted Police

| | |
|---------------|-------------|
| Baker Lake | Pangnirtung |
| Cambridge Bay | Pond Inlet |

| | |
|----------------|---------------|
| Cape Christian | Resolute |
| Coppermine | Sachs Harbour |
| Eskimo Point | Spence Bay |
| Lake Harbour | Tuktoyaktuk |

Department of National Defence

| | |
|------------|------------|
| Cape Dyer | Hall Beach |
| Cape Parry | |

Department of Transport

Coral Harbour

Department of the Environment

| | |
|--------|-----------|
| Alert | Isachsen |
| Eureka | Mould Bay |

Plans for 1975-76

Commercial activity in the Territories and the Arctic Archipelago increased considerably. Consequently the adequacy of Customs control is subject to continuing examination to determine the extent to which Customs surveillance and service can be improved. In this fiscal year an extensive review will be conducted to determine Customs requirements.

Revenue and Expenditure Whitehorse, Yukon

| Fiscal Year | Revenue | Expenditure |
|-------------|---------|-------------|
| 1973-74 | 552,000 | 455,000 |
| 1974-75 | 600,000 | 261,000 |

With the exception of the Yukon Territories, all Customs offices in the Territories are accountable to financial responsibility centres at Customs ports in the provinces.

Long-term Plans

To maintain customs service in the North and to increase such service where required by continuing northern development.

DEPARTMENT OF PUBLIC WORKS (DPW)

Review of 1974-75

During the 1974-75 fiscal year, the Public Works Department supervised the construction of numerous projects for the RCMP in the Northwest Territories. In addition to the aircraft hangar in Frobisher which was completed, cell units were built in Cape Dorset and Clyde River.

A detachment unit was built in Clyde River and a building enclosing a workshop, garage and warehouse was completed in Pond Inlet while another one was started in Clyde River.

Accommodation Operations — A nursing station was built at Pangnirtung and an air-controlled incinerator was installed at the General Hospital in Frobisher. All work was done for National Health and Welfare.

Plans for 1975-76

For the next fiscal year, the only work scheduled to be done by DPW for the RCMP is to complete the building in Clyde River which will contain a combined warehouse, garage and workshop.

Accommodation Plans — Tenders have been called for construction of a nursing station for Igoolik. Additions and alterations to the General Hospital at Frobisher are planned for National Health & Welfare.

Long-term Plans

The RCMP has scheduled the following projects: Renovations of their subdivision in Frobisher and construction of a detachment unit in Pond Inlet. Nursing stations are planned for Pond Inlet, Cape Dorset and Repulse Bay for National Health and Welfare.

Yukon

Review of 1974-75

Highways

Routine maintenance of the Alaska Highway west of the BC/Yukon Border (Mile 626) and of the Haines Road was carried out by the Government of the Yukon Territory under agreement with DPW. Three contracts were awarded by the Yukon Territorial Government for gravel crushing and stockpiling. In the Watson Lake-Swift River, contract was completed by a Yukon Government work force because the contractor failed to do the work. In the northern area of the Yukon, the contractor did not complete the contract; this will be completed in 1975. The NWT Government awarded a contract to supply and spread calcium chloride: work was completed. Maintenance of the BC Section of the Alaska Highway (Mile 83 — 626) was supervised directly by DPW personnel. Three highway maintenance contracts and two gravel crushing and surfacing contracts were completed. The Alaska Highway, north of Fort Nelson, was closed to traffic by heavy rains and spring runoff on July 16, 1974, which caused very serious damage including intermittent washouts, slides and other damage from Mile 356 to Mile 485. The highway was reopened to emergency traffic by July 23, and to normal two-way traffic on July 26, 1974. By the 1974 freeze-up, the damaged highway was substantially restored to its pre-flood construction standards. The estimated cost of repairs to these washouts and flood damage is \$1,700,000.

Under the bridge-improvement program, the Bougie Creek bridge at Mile 229 was completed. Phase II of the Muskwa River bridge, the steel superstructure, was completed on schedule and work was started on

the concrete deck. Modifications to the Lower Liard suspension bridge have been designed and tenders called on the first phase to improve the capacity of that structure. Two multi-plate culverts were installed to replace the Silver Creek bridge at Mile 1054.

The reconstruction and paving of Mile 8 to Mile 93 and Mile 206 to Mile 231 was completed. The highway was rebuilt to the top of the crushed base course from Mile 293 to Mile 299. Work is being done on the drainage contract on the new right-of-way from Mile 233 to Mile 250.

The Department of Public Works continues to provide engineering services to the Department of Indian and Northern Affairs in support of their Northern Roads Program. During 1974-75, the Dempster Highway from Mile 186 to Mile 220 was finished under the present contract. After a shut-down of two months during winter, the contractor started work again in late February 1975. Construction of the Carcross-Skagway Road was completed to Mile 60 under the present contract. The contractor shut down for winter in late November and will recommence work again in March. Contracts for structural steel were let for the Eagle River bridge in 1974 and surveys for the reconstruction of Mile 0 to Mile 78 of the Dempster Highway were begun.

Plans for 1975-76

Maintenance of the Alaska Highway and Haines Road will be carried out under the same arrangements as for last year.

Under the bridge-improvement program, the concrete deck on the Muskwa River bridge will be completed. The first phase of a project to improve the Lower Liard suspension bridge will be carried out this

summer. The second phase, the replacement of the deck, will be scheduled for the summer of 1976-77. Two contracts to restore the flood damaged Racing River bridge are under way and will be completed in 1975-76.

Reconstruction of the Alaska Highway from Mile 883 to Mile 904 will be started. Tenders may be called for major reconstruction contracts between Mile 83 and Mile 317.

The Dempster Highway will be completed to Mile 237 this summer. The Eagle River bridge will be constructed during the winter and summer of 1975 and will be completed in mid-summer of 1976. It is anticipated that contracts for the next 12 miles beyond the Eagle River, Mile 237 to Mile 249, will be called for tender by mid-summer and work will commence the following winter. Surveys for reconstruction will continue on the Mile 0 to Mile 78 section. Construction of the Carcross-Skagway Road will be complete to Mile 66 by late July, and tenders for the remaining section are expected to be called in late summer 1975. Construction will be limited to clearing for the balance of the fiscal year.

Long-term Plans

A Program to rebuild and pave from Mile 865 to Mile 904 and from Mile 928 to Mile 938 of the Alaska Highway has been approved and will be carried out in stages over the next few years. A program to rebuild and pave the Alaska Highway from Mile 93 to Mile 317 will proceed when approval is received.

Review of 1974-75

Property Administration

The Property Administration Branch has continued to provide accommodation to other government departments, Crown agencies and the Yukon Territorial government, and leased office space in the private sector has increased to meet the growing demand. The renovations to Building 201 are complete and the building is occupied by DPW. Building 200 is 95 per cent complete and will be occupied by DIAND with a small office space for Energy, Mines & Resources.

The Branch continues to administer the Northern Pool Housing in Whitehorse and Fort Nelson. Demand for the housing units is great and there is less than a three per cent vacancy rate. The maintenance program in the past year was extensive and a good standard of accommodation has been maintained.

Plans for 1975-76

The new Yukon Territorial Building should be completed this year and will be ready for occupancy by most of the Territorial Government agencies. Parts of the Federal Building will become vacant and may be re-occupied by federal departments. An extension will be built on the Fort Nelson post office to house federal departments.

Long-term Plans

Property Administration will continue to be responsible for office accommodation and Northern Pool Housing in this area. We expect continued expansion of some federal departments and a continuing need to provide additional space.

Northwest Territories

Accommodation Operations

The program initiated in the early 1970s to supply federal housing in the Northwest Territories is continuing. Construction was begun in Inuvik, Ft. Smith, and Hay River, and design specifications were completed for housing in Yellowknife, Ft. Simpson, and Pine Point. It is expected that work in these three centres will begin during 1975.

Review of 1974-75

In Yellowknife, a seismology building was completed for Energy, Mines & Resources as well as a major addition to the RCMP complex.

For National Health & Welfare, the enlargement of the Inuvik General Hospital, which began in 1973, was completed and a new hospital was built at Edzo. Nursing stations at Rankin Inlet and Cambridge Bay were also completed during this past year. A new clinic scheduled for Norman Wells was not started because negotiations for a site with the Territorial Government were not completed. Design specifications for a nursing station in Spence Bay were completed, and construction is expected to begin in 1975.

The environmental laboratory at Hay River for Environment Canada was completed, and a trailer park site at Yellowknife was purchased.

Marine Work

Mackenzie River survey and investigation — Due to higher priority items this investigation, which began in 1971, continued at a low level with only a very small amount of survey work carried out at Sans Sault Rapids in the summer. Office work continued on

data compilation, designing, estimating and plan production. Thirty-four estimates of cost were prepared for Transport Canada dealing with various combinations of dredging priorities. The estimated cost of a complete dredging program is now \$37,000,000.

An interim report will be submitted by June 15, 1975.

Estimated expenditure for this fiscal year is \$36,000 with \$846,000 spent on the program to date.

Hay River float plane landing area — An area upriver from "new town" was surveyed. It was not completed owing to bad weather in the fall.

Fort McPherson wharf — A sounding survey was made to check on navigation conditions within the vicinity of the wharf and to obtain information for the construction of a proposed new wharf.

Survey controls for dredging using departmental equipment — Control surveys and before and after dredging sounding surveys were made. Due to environmental considerations the sounding surveys were more extensive than formerly.

Ft. Providence ferry crossing — Surveys were requested by the Territorial government. Because of early winter conditions the survey had to be put off until 1975-76.

Mackenzie River vertical control — This is being done by the Geodetic Service at the request of Public Works, in support of the Mackenzie River Investigation. The survey began in 1972 with DPW having spent \$185,000 to date. The 1974 survey ended at river mileage 610.

Mackenzie River — Sans Sault rapids — A winter survey was carried out in support of wreckage removal.

Surveys, investigations and reports — DIAND. funding — \$7,000

Ferry crossings — The following surveys were carried out and reports with recommendations prepared in support of the highways division of the public works program for ferry crossings and haul-outs. Mackenzie River crossing at highway mileage 346

Ft. Norman

Mackenzie River crossing at Arctic Red River Peel River crossing near Ft. McPherson

A significant amount of office work was involved in hydrometric data compilation and examination, and designing for low water datums, high water levels, and ice breakup levels.

Merv Hardie Haul-out — Minor surveys were carried out in support of haul-out construction.

Surveys, investigations and reports — Territorial Govt. funding

Tuktoyaktuk, Phase II shore erosion study — The field work for Phase II, consisting of soundings, borings, soils testing, current measurements, bottom sampling, aerial photo control, and thermistor installation was completed by September 7. Aerial mapping will be completed by mid-December. The target date for submission of the report is May 15, 1975. The estimated cost is \$43,000.

Tuktoyaktuk emergency shore protection — Two construction estimates were prepared for the Territorial Government on possible emergency works.

Norman Wells land fill study — A report on this survey and study was submitted in April 1974 at a cost of \$3,600.

A report and cost estimates for emergency shore protection work at the RCMP property at Tuktoyaktuk were submitted to the RCMP.

Information and data were provided to consultants carrying out harbour development studies at Hay River.

Information and data obtained through the Public Works Mackenzie River Investigation were provided to consultants involved in gas pipeline studies.

A 1973 survey is being plotted showing bank and channel conditions along two miles of the Ft. Simpson waterfront for use by DPW, MOT and DIAND.

A survey, report and cost estimates, were prepared for Environment Canada, Fisheries for a haul-out at the Hay River fisheries station.

Construction

Norman Wells wharf — Unusually high water levels after freeze-up caused the water to back up and construction work was suspended in November. The completion date is now estimated at July 31, 1975 for a cost of \$788,000.

Ft. Norman, wharf relocation and access road — Tenders were called in July but were cancelled after a delayed borings report indicated bad soil conditions. Culverts were delivered to the site for use in future road work. A survey for a relocated access road and suitable brown materials has been completed and estimates of the cost are expected January 31, 1975. 1974 expenditures are estimated at \$9,900.

Wharf maintenance — Minor contracts were awarded for launching, maintaining and haul-out of floating wharves at Ft. Simpson, Ft. Norman, Ft. Good Hope and Aklavik. Contracts for minor repairs were also let for Ft. Providence, Ft. Simpson, Aklavik, Hay River, Spence Bay (deadman anchors only), and Ft. Resolution.

Wrigley — floating wharf installation — A contract for \$21,000 was awarded on July 10, 1974. Because of delays encountered in shipping units stockpiled at Norman Wells to Wrigley, combined with early close-down of navigation, this contract will be carried over to 1975-76.

Expenditures — An amount of \$485,500 will be spent on Public Works marine construction in 1974-75.

Merv Hardie haul-out — The haul-out at Ft. Providence was completed for DIAND at a cost of \$303,000.

Floating Plant Dredging

Two hydraulic cutter suction dredges belonging to DPW operated at Hay River and within Beaver Lake and removed 141,000 cu.yds. of material. Operational costs for floating plant were \$393,000, including those of the survey vessel *Hugh A. Young*. Capital expenditures for floating plant were \$130,000.

Highways

The Western region of DPW is responsible for highway construction in the Northwest Territories including the Mackenzie Highway, which, so far, runs from the Alberta boundary to Fort Simpson and will eventually reach Inuvik and Tuktoyaktuk. The Dempster Highway will lead from Inuvik to the Yukon boundary and the DPW's Pacific region is constructing north from Dawson City to make the connection of the Dempster Highway at the boundary.

This winter geotechnical soil testing crews from Public Works are working from mobile camps obtaining the soil samples necessary to complete the design of the Mackenzie Highway from Fort Simpson to Inuvik. These mobile camps are completely self-contained and soil testing is carried out with drills. The entire operation moves at about four miles a day. To protect the environment heavy loads are not allowed on the ground in the Arctic during the summer and where additional soil sampling is necessary during the summer it is done with drills transported by helicopter.

This winter the clearing of the right-of-way is continuing. There is now more than 250 miles of right-of-way for the Mackenzie Highway cleared north of Fort Simpson. This is being done by Hire North, an organization that hires only people indigenous to the North. In addition to the clearing work, the people are being trained for survey work and the operation of construction equipment under a specially designed program.

Larger construction contracts are generally carried out by contractors, who fly into the isolated areas directly from southern Canada. At present, work is being done by Tompkins Contracting Ltd. of Fort Nelson, BC, on a section approximately 100 miles north of Fort Simpson. Major work is carried out through the winter months, including the installation of large culverts specially designed so as not to hamper the movements of fish on the small stream. The area north of Fort Simpson is in the discontinuous permafrost zone and construction techniques are normal to those of southern Canada. The finished road looks no different from those found in rural areas of Alberta. Two companies Keen Industrial Ltd. of Fort Nelson, BC and Western Construction and Lumber Co. Ltd. of Edmonton have contracts for work on the Dempster Highway. The highway is in the continuous permafrost zone and is constructed by drilling and blasting local shale rock materials, loading them into trucks which always travel over completed sections of the road, and dumping the material directly on the tundra. The road is shaped by machinery working on the road surface: no equipment is allowed on the tundra adjacent to the road. The completed road is an embankment made entirely of rock which will be surfaced with crushed gravel.

GOVERNMENT OF THE NORTHWEST TERRITORIES

Responsibilities

To exercise government jurisdiction within the Northwest Territories, exclusive of control over natural resources (except game which is a territorial resource).

Review — 1974-75

Of major importance during the 1974-75 fiscal year was the election of the first fully elected council of the Northwest Territories. Territorial residents selected 15 members to serve for the next four years. In line with direction given by the Minister of Indian Affairs and Northern Development, the Council will recommend two of its own members to sit on the Executive Committee. The Commissioner of the Northwest Territories announced that these members would head the departments of Education and Social Development.

During the year, inflation caused problems in the Northwest Territories as it did in other parts of Canada and the world. The Territorial government instituted spending restrictions, but the situation was met with understanding by northern residents.

There was a major review of Personnel, Policy and Management resulting in extensive recommendations to increase the efficiency of the Territorial Administration. Most of the recommendations have now been put into effect.

A review of the government organization was carried out which will result in certain re-organization being reflected in the 1975-76 fiscal year.

In the area of economic development the administration of sports fisheries was transferred from the federal to the territorial government.

The Corrections Services were further de-centralized with community correctional

centres being opened in Frobisher and Hay River, keeping offenders closer to their home communities.

Progress was made in implementing a non-graded educational program where students are allowed to advance at a rate compatible with their interests and abilities.

There was continued growth in local government as Aklavik, Pond Inlet and Rankin Inlet became hamlets.

The Northwest Territories Interpreter Corps was expanded by six new members, bringing the total to 15 Indian and Eskimo interpreter-translators who are playing an important role in improving communication in the NWT.

Review of Council Operations — 1974-75

On June 17, 1974, in Yellowknife, Commissioner Hodgson declared open the 53rd Session of Council meeting held for the first time in the recently completed Explorer Hotel.

Provisions relating to property rights of married persons were enacted when Council passed the Matrimonial Property Ordinance. The purpose of this legislation is to ensure that in the event of a marriage break-up and property settlement, equitable recognition is given to each spouse's contribution to the family assets.

The reduction of human suffering and economic wastes brought about by accidents and injuries on the job, was the objective of Council's enactment of a Safety Ordinance. This Ordinance provides for on-the-job safety and protection of employees, an area not previously covered by Territorial legislation. The Medical Profession Ordinance was amended so that nurses employed in remote areas may provide medical treatment under the general direction of a medical practitioner.

To achieve orderly and economic development of Territorial communities, Council passed the Planning Ordinance which sets up planned measures and controls.

A complete revision of the Worker's Compensation Ordinance was enacted by Council to implement the recommendations of the Inquiry Board appointed in 1972. Among the most significant changes are the increases in benefits provided, including the minimum payments for total disability, widows and dependent children pensions, etc. Also of considerable importance is the provision for appointment of an NWT Worker's Compensation Board which brings the Territories more closely into line with provincial practice.

The Council Ordinance was amended to define the boundaries of the 15 electoral districts authorized by the recent amendments to the Northwest Territories Act. At the same time, the franchise was extended to landed immigrants resident in the Territories. Conflict of interest provisions identical to those which apply to members of municipal councils and school boards, etc., were also incorporated into the Ordinance.

Council approved a policy proposal whereby the Auditor General of Canada would be asked to appear annually before Council to provide a more complete annual report, the format to be developed through consultation with Council.

On January 10, 1975, the 54th Session of Council convened in Yellowknife.

The main item of business was the consideration of the main budget for 1975-76. Council approved appropriations totalling over \$164 million. Supplementary appropriations for 1974-75 totalling over \$4.5 million were also passed. Other financial

legislation included bills to authorize the borrowing of funds by the Northwest Territories Housing Corporation to carry out programs under the National Housing Act, to authorize the Commissioner to enter into agreements with the Government of Canada respecting finances, to authorize the Commissioner to borrow funds from Central Mortgage and Housing Corporation for the development of a townsite at Strathcona Sound, and to authorize the Commissioner to borrow funds from the Government of Canada for financing capital loans to municipalities.

Council amended the Corrections Ordinance to allow the Commissioner to enter into agreements to send inmates who are sentenced to more than six months, but less than two years, to institutions under the supervision of the Canadian Penitentiary Service if they are not profiting by programs in the Northwest Territories.

The Nursing Profession Ordinance was passed providing autonomy to the Northwest Territories Registered Nurses Association in reviewing the qualifications of applicants for membership, collect fees, and discipline members.

Council passed a private member's bill to establish a Science Advisory Board to advise Council on scientific, engineering and technological resources.

The Seventh Council of the Northwest Territories completed its four year term on January 21, 1975, and elections for a new 15 member council were held on March 10, 1975.

Long-term Plans

To develop the Northwest Territories through legislation and administration geared to the special social and economic needs of the Northwest Territories and to involve all northern residents in the processes of governmental, economic and social development.

DEPARTMENT OF LOCAL GOVERNMENT

Responsibilities

Fostering, encouraging and assisting in the development of local government; administration of the municipal and hamlet ordinances; town planning and lands; recreation; civil emergency planning; public library services and co-ordination of employment for northern residents.

Review of 1974-75

Research & Development Division

The preparation of a paper on the philosophy of Local Government was a major undertaking in 1974. Obtaining sufficient involvement and input from the local people for this paper was considered essential.

Aklavik, Pond Inlet and Rankin Inlet became hamlets, bringing the number of Hamlet Councils to nine, and the number of Settlement Councils to 31. Both before and after they applied for hamlet status the Rankin Inlet Settlement Council carried out an extensive program to inform the people of the community all about hamlet status, and what it would mean to them.

Workshops for settlement secretaries were held at Pangnirtung and Fort Good Hope. These courses emphasized both administrative and community development skills for settlement secretaries.

The use of video tape as a developmental technique was used by settlement secretaries and settlement councils and staff for intra-community communication and to animate dialogue between groups on community issues.

Municipal Division

Grants and debenture loans to tax-based municipalities totalled \$4,801,000 in 1974. The funds were used to improve and extend water/sewer facilities, construct roads, sidewalks, instal street lighting, acquire fire fighting equipment, and develop new subdivisions. This represents an increase of \$1,354,500 over the previous year.

A general mill rate applicable to all properties outside of incorporated municipalities was established in 1974 and, where feasible, all real property, including pipeline installation, will be assessed and taxed accordingly by the Territorial Government.

Environmental considerations are receiving greater attention from local councils at all levels, which augurs well for the implementation of Territorial policies designed to improve living standards and the quality of life in an economic and efficient manner.

Town Planning and Lands Division

A number of communities were assisted in the preparation of General Development Plans to guide their long-term growth and change. For example, plans were initiated with Cambridge Bay, Tuktoyaktuk, Gjoa Haven, Aklavik, and the Arctic Bay-Strathcona Sound Area.

During 1974, the lands in and surrounding Fort Franklin, Fort Good Hope, and Fort McPherson were transferred to Territorial Administration bringing the total number transferred to date to 14 communities. With respect to the remaining settlements, the Division continued to administer the land on behalf of the Federal Government.

Employment Division

Several programs have been mounted to come to grips with employment problems.

Over forty positions have been established in Internal Middle Management Training to provide on-the-job training and career development for Northerners in the Government of the NWT. This program represents an alternative to the normal entry qualifications and experience requirements are geared to individual needs. Community controlled employment offices were operating in 11 communities by the end of 1974. Seven of these were directly sponsored through Government of the NWT grants and the remaining four received operating funds through the Department of Manpower and Immigration's Outreach Program. During 1974, 946 persons were placed in jobs through these community agencies.

During 1974, Territorial Government job mobility grants made it possible for 50 persons to take advantage of short-term employment opportunities which might not have otherwise been available. To assist Northerners find permanent employment, training on-the-job contracts for 54 persons working with 50 employers were written in 1974.

Public Library Service

An increasing demand for library services from various construction companies and an increase in the number of borrowers' requests for specific information or material from headquarters, reflects Northerners' growing awareness of services available within their library system. Unfortunately, despite these increases, the circulation statistics showed an over-all drop of 17 per cent from 100,143 in 1972-73 to 82,748 in 1973-74; the full impact being felt of the arrival of live television to so many northern communities.

Concerned about this situation, and in an effort to provide interesting and suitable alternatives to books, the Public Library Services has plans to create an audio-tape program from the funds collected by Alderman David Ward of Edmonton in

memory of David Kootook. These funds are donated to the library system to provide a commemorative program. A central repository of tapes will be set up to work with other existing tape collections as well as equipment for listening in each member library. One of the most important functions of the program will be to collect indigenous folklore in both native languages and English, to enable this part of the cultural heritage to be passed on to future generations.

Emergency Measures Division

In the field of Civil Emergency Planning and Emergency Measures, increased emphasis has been placed on efforts to minimize the effects of floods during break-up in the Mackenzie Valley. However, despite these efforts, flooding occurred at Hay River, and almost all the people of the West Channel settlement suffered from its effects. The Territorial Assessors took stock of the damage and eventually about 50 claims were accepted. The flood danger to the rest of the town was only averted after detonation of nearly two tons of blasting powder.

In the area of Environmental Protection the total of oil and chemical spills during the year exceeded 40. Most, however, were minor in nature, and were reported very quickly. A good liaison has been established with the Department of Indian and Northern Affairs and expertise is being acquired in the difficult techniques of arctic recovery operations.

Recreation

In the spring of 1974, a recreation paper titled "Recreation North" was compiled for the Department of Local Government. The paper was presented at the June, 1974, session of the Territorial Council where its recommendations were approved in principle. The paper reviews all aspects of the Territorial Government's involvement in the field of recreation in the North. It was widely circulated throughout all the communities of the NWT and all interested persons were asked to respond to the policy proposals.

The Arctic Winter Games were held in Anchorage, Alaska. It was the first time that traditional Arctic sporting events were included in the competition. The NWT contingent finished second, closely behind the Alaskan flag-winning representatives.

The Territorial Government is concerned about the escalating costs of the Arctic Winter Games and the resultant distortion of

funding for other programs. There is also concern regarding the large flow of Recreation Funds towards sporting events. In response to these concerns the Recreation Division is presently concerned with re-channeling some funds into the area of interpretation and promotion of northern culture and community involvement in a broad spectrum of leisure opportunities.

DEPARTMENT OF EDUCATION

Responsibilities

Curriculum, school services, adult education, vocational programs.

Review of 1974-75

Considerable time was devoted to the production of a new Education Ordinance which would result in more involvement and decision making in education at the local level. Many people in the North had an opportunity to contribute to its production, but more input from all concerned groups is still being strongly requested.

Enrolment and Teaching Staff

Enrolment of pupils from kindergarten to senior matriculation grew from a total of 11,992 in 1973 to 12,803 in 1974, an increase of 6.8 per cent. The number of pupils taking advantage of higher education and training also increased. Those attending universities outside of the North increased from 161 to approximately 180. Another 150 are taking vocational type courses in the provinces. In all cases the NWT Government covers the basic costs.

There were 606 teaching positions assigned to the Department of Education with a further 90 in public, separate, and society schools. This was a four per cent increase over 1973.

The Teacher Education Program continued to flourish with the centre of training in the Eastern Arctic being transferred from Chesterfield Inlet to Frobisher. Preference is given to students who speak one of the Athapaskan Indian Languages or Inuktitut (Eskimo). Over 15 graduates are now serving in classrooms throughout the Northwest Territories. In 1974, a total of 41 students were training to be teachers in this program.

Working with teachers particularly at the primary grades, were over 100 native classroom assistants. These young people are of great value to the teacher in assisting with the non-professional aspects of teaching, as

well as interpreting the education program to the community. Some of these classroom assistants who have the skill, teach at least part of each day in the indigenous language and give instruction on that language.

School Construction

New elementary schools are being completed in Spence Bay and in Eskimo Point. These schools were designed to replace older buildings and to provide needed recreation and resource facilities in the communities.

Design work and foundation construction has been completed for a major addition to the elementary school in Fort McPherson, with the final construction to be completed before the beginning of the school term in 1975.

Increases in the high school enrolment in Fort Smith and expansion of the high-school programs in Yellowknife, have required that new additions be constructed at the J.B. Tyrrell High-School and the Sir John Franklin High-School. These projects, begun in 1974, will be completed in 1975.

Program Development

The Program Development Section continued to emphasize the production of culturally relevant materials to assist teachers and Adult Education Instructors in making teaching more relevant to the variety of cultures in the Northwest Territories. There has been continued concentration on programs necessary for implementation of the philosophy as set out in the two curriculum handbooks, "Elementary Education in the Northwest Territories", and "Learning in the Middle Years".

The general principle that children of the NWT begin their education in their own language requires that a large body of material be produced in the native languages for pupil use and use by teachers, in all subject areas, not readers alone. Over the past year a considerable number of Northern Learning Materials have been prepared and distributed. Two of the major items are "Piksaaq", a unit of Inuit artifacts and tools, and the unit "Flora and Fauna".

Preliminary work has begun on production of a senior high curriculum.

Continuing and Special Education

In response to requests from communities across the Northwest Territories, adult education centres and programs have continued to expand. There are now 26 settlements across the Territories offering

adult education programs through an established centre or in cooperation with the elementary and high-schools.

A new course, Basic Job Readiness Training, is made up of 50 per cent actual skill training, and is available in those settlements where work facilities are available. Trainees in many of these classes are subsidized with Canada Manpower funds and receive a training allowance for the duration of their course.

Apprenticeship continues to be the most effective program for the development of skilled tradesmen. Manual skills are learned on-the-job, with close supervision by the Department of Education staff to ensure that the apprentice is receiving adequate work experience.

There are 310 apprentices working across the Northwest Territories in 24 trades.

The most recent development in the apprenticeship area is the designation of a new trade, Housing Maintenance. This trade was formulated to meet the specific requirements of the North and an individual working in this trade is responsible for the maintenance, repair and upkeep of buildings in the settlements. The greatest need for this type of skilled tradesman is by the local Housing Association in each settlement.

In addition to training in the technical/vocational skills, 177 students participate in the higher education grant program which provides financial assistance to those students studying at a recognized university. The Higher Education Bursary program provided financial assistance to a further 10 university students.

From a six-month Heavy Duty Operator training course in 1968, the Adult Vocational Training Centre in Fort Smith has grown to offer over 15 career programs, including electronics-telecommunications, certified nursing assistants, clerk-typist, business administration, basic training for skill development, basic industrial skills, food services, pre-employment welding, pre-employment carpentry, pre-employment Heavy Duty Mechanics, Heavy Equipment Operation, Heavy Duty Trucking, Housing Maintenance, apprenticeship theory courses and many short courses which vary according to demand.

DEPARTMENT OF SOCIAL DEVELOPMENT

Responsibilities

Social assistance, blindness and disability allowances, child welfare, medical-social

services and rehabilitation, corrections, alcohol education and the Health Care Plan.

Review of 1974-75

Social Assistance

Expenditures on social assistance have followed the upward trend in the cost of living, with higher total costs in all but the Keewatin Region. Detailed analysis of living costs particularly for food, was carried out during the year and an assessment made of the magnitude of increases in assistance rates which would be necessary to upgrade them from the existing rates established in 1971.

The price data obtained reinforces the need to continue the policy of varying food allowance rates relative to the shelf-prices in each community, rather than having one standard rate for the whole of the Territories.

Child Welfare Services

Progress has been made in upgrading the resources in the child care field through the opening of group homes in Yellowknife, Frobisher and Inuvik. The treatment program of the Fort Smith Centre has been extended by further training of staff and through the opening of a satellite unit known as the Little Wood Buffalo Ranch. This unit reduces the institutional atmosphere of the Centre and provides an outdoor experience for the youngsters under treatment.

Alcohol and Drug Program

Changes in the Liquor Ordinance permit local communities greater latitude in deciding about the availability (or unavailability) of alcohol. The amendments will enable the Commissioner of the Northwest Territories to act quickly in response to requests from communities for the control of liquor.

Another significant change is that an Alcohol and Drug Co-ordinating Council has been organized.

The Alcohol and Drug Co-ordinating Council is promoting communication and cooperation between agencies involved in providing treatment or preventive services and advising the Council of the NWT concerning the effectiveness of Territorial policies, programs and services. Responsibility for the administration of the Community Alcohol Problems Grants Program was passed to this Council as of April 1, 1974.

Correction Services

The main Correctional Centre at Yellowknife applied its program to an average daily population throughout the year of 95 per cent of capacity in the men's section and 40 per cent in the women's section.

The Baffin Correctional Centre, the first community correctional centre in the Northwest Territories, was opened at Frobisher in early April of 1974.

This is a minimum security centre, designed to retain in or near their own community offenders who present no risk to society. While the major objectives of incarceration are maintained, additional objectives of this type of centre are also achieved. These are principally, the continuation of family and social contacts, the limiting of language barriers by retaining the offender in his own area, and the reduction of travel costs.

In the Baffin Centre program, emphasis is placed on fostering in the Eskimo offender improved self-esteem relative to his cultural background, through "on the land" training and teaching the skills necessary to successful community life in the Eastern Arctic.

The former Correctional Camp at the Yellowknife River has been moved to Hay River and opened as the South Mackenzie Correctional Centre in October, 1974. It is also a community correctional centre with the same objectives and similar concepts as the Baffin Centre.

Health Care Plan

Medical care insurance is provided by private medical practitioners in Yellowknife, Hay River and Fort Smith and by medical staff and consultants of Health and Welfare Canada. Staff of the Health Care Plan in Yellowknife administer the Territorial Hospital Insurance Services Ordinance and the Medical Care Ordinance.

The NWT Medical Care Plan covers almost all medically necessary services rendered by physicians and surgeons for all eligible residents.

Guidance and executive authority for the administration of the Territorial Hospital Insurance Services Ordinance is provided by the Territorial Hospital Insurance Services Board.

As an aid to the planning of future health care facilities in the Mackenzie area, the Territorial Government contracted for a study of existing services and future requirements, particularly concerning possible

pipeline development. Preliminary results of this study have shown the need for expanded hospital facilities in Hay River, and eventually for alternate hospital and health services facilities in Fort Smith.

DEPARTMENT OF ECONOMIC DEVELOPMENT

Responsibilities Promoting and assisting

Promoting and assisting economic development, tourism, research and planning, and game management.

Review of 1974-75

The advent of an era of oil and gas exploration and development has faced the people and government of the Northwest Territories with new challenges. Prime responsibility for ensuring that economic opportunities generated by new development brings maximum returns to the people of the Territories falls to the Department of Economic Development.

Research and Evaluation Division

An entrepreneurial opportunities study of the Mackenzie Corridor was undertaken in 1974 to identify and evaluate major secondary benefits in the form of new business opportunities which may result from the construction and operation of a Mackenzie Valley pipeline and/or highway. The study shows that profitable opportunities would exist in the fields of pre-fabricated housing, concrete products, highway roadside services, operations and maintenance contracting and agriculture.

Tourism Division

Three co-operatives and five northern-owned companies opened tourist accommodations during the year. Each of these businesses received grants provided through a program for the development of tourist accommodation in remote indigenous communities.

During the year technical assistance and guidance was provided to the Inuit co-operatives at Spence Bay and Pond Inlet. These co-operatives initiated development of arctic char sport fishing camps or outfitting businesses. They have not asked for financial assistance, preferring to establish and operate the businesses with their own resources.

The volume of tourists and the dollar value of expenditures increased slightly over 1973. In 1974, an estimated 24,000 visitors

took their vacation in the Northwest Territories, spending approximately \$6,500,000.

Industry and Commerce Division

Financial Assistance to residents of the NWT for various business ventures totals approximately \$3.9 million.

Loans processed since April, 1974, were as follows: Small Business Loan Fund - 17 loans for approximately \$300,000; Eskimo Loan Fund - 18 loans for approximately \$900,000; Great Slave Lake Fishermen's Loan Fund - four loans for approximately \$7,000.

The Government has continued to assist with the funding of the Canadian Arctic Co-operative Federation by providing a \$75,000 operating grant. Four new co-operatives were incorporated during the year, bringing the total number in the Northwest Territories to 49, of which 41 are considered active. One new credit union was incorporated. The number of incorporated credit unions in the Territories now stands at four of which three are active.

The Department of Economic Development provides fish plants at Cambridge Bay and Pelly Bay on a rental basis. The fisheries are operated by the local co-operatives. Plant rental is based upon production and is collectable from the co-operatives.

The lumber mill at Fort Resolution has been re-activated. A project mill manager and office manager have been employed and are located on site and the mill, although not operating at full production, is producing 20,000 b.f.m. per day. There is a steady demand for the finished lumber products.

The Fort McPherson canvas project continues producing primarily tents and snowmobile covers plus various types of casual bags. The products have not officially been introduced to the southern market, as most production is being consumed by the North.

The Rankin Inlet Cannery provided approximately \$75,000 in wages for labour within the community. Fishermen from Whale Cove, Eskimo Point and Rankin earned an additional \$15,000. Arctic char, whitefish and lake trout are canned and sold throughout Canada. New products are planned for this season such as char paté and packaged frozen fillets.

A prototype suite of knock-down furniture using spruce from the Fort Simpson area has been constructed and an initial order to furnish two three-bedroom

houses has been received. It is anticipated that 1975 will see the establishment of a full-fledged furniture industry supplying housing needs for the Territories.

The Department of Economic Development, in conjunction with a private company, developed four moulds for the manufacture of fibre glass canoes and substantial orders are expected as a result.

In 1974, two new arts and crafts projects were initiated; Gjoa Haven Handicrafts and the Eskimo Artifact Project at Frobisher. One project, Pangnirtung Graphics, was turned over to the local co-operative. New projects are planned in Paulatuk, Pelly Bay and Clyde River in 1975.

Game Management Division

In 1974, under a reciprocal agreement with the Federal Department of Fisheries, all NWT game management officers were appointed ex-officio fisheries officers and vice versa for fisheries officers in the NWT.

The Arctic Divers Ltd., were contracted to conduct an underwater search for crustaceans and molluscs in the vicinity of Coats Island in Hudson Bay.

Continuing major commercial fisheries for the export market were carried out on Great Slave Lake (2,500,000 pounds), Cambridge Bay (125,000 pounds), Pelly Bay (60,000 pounds), Holmes Creek Delta Fishery (50,000 pounds), and Rankin Inlet (80,000 pounds). A new commercial fishery was initiated on Baffin Island with a total take of 50,000 pounds. Commercial fisheries for the domestic market were also carried out in many settlements along the Mackenzie Valley and on Baffin Island.

Emphasis in big game management continued to be placed on the barren ground caribou due to the importance of this species to the native people. Calving ground surveys were conducted on all major herds. Another bison round up was held and 360 animals were vaccinated for anthrax. Assistance was provided for organized caribou hunts in 16 settlements which harvested 136,000 pounds of meat valued at \$92,000.

Increased catches of white fox and muskrat combined with unusually high prices produced the most valuable fur take in many years. The total value of fur produced in 1973-74 was \$3,068,000 which was more than double that for 1972-73.

A Trappers' Incentive Grant program was introduced during 1974. This program is designed to provide incentive to the trapping

industry by providing a direct subsidy to those trappers who reach a basic level of production. Based on the 1972-73 fur harvest, there were 786 trappers who produced more than \$400 in fur value and qualified for the grant. Approximately \$125,000 was distributed to these trappers. During the 1973-74 season, 1,386 trappers qualified and \$150,000 was distributed.

An additional nine hunters and trappers associations were formed during the past year, bringing the total to 37.

A central arctic polar bear study is being carried out by the research section in close cooperation with the Canadian Wildlife Service. The purpose of this ongoing study, which was initiated in 1971, is to provide the basic biological data necessary to maintain Canada's polar bear at acceptable levels. The polar bear is a considerable resource for the Inuit hunters. They are participating in the study by providing specimens for laboratory analysis from the animals harvested, as well as carrying out surveys to identify polar bear denning areas by motorized toboggan.

DEPARTMENT OF ADMINISTRATION

Responsibilities

Providing necessary support services for the other government departments in the areas of finance, personnel, supply, transportation, communication and data processing as well as managing the Consolidated Revenue fund, collecting all territorial revenues and performing related treasury activities.

Review of 1974-75

Systems and Computer Services

Progress has been made in the past year towards decentralizing computer operations in an attempt to place data processing services closer to the people utilizing the computer facilities. Installation of remote computer terminals is planned for Inuvik, Rankin Inlet, Frobisher, Fort Smith and Cambridge Bay. These terminals will provide for the direct processing of data in these locations avoiding delays currently experienced. Similar terminals will also be installed in various departments in Yellowknife to provide direct access services.

An in-house training program with the development of a computer operator course has been expanded. In addition to training local people for work in the Key punch

Section native northerners are now training for positions in Computer Operations.

Finance and Office Services

The Finance and Office Services Division is responsible for processing and recording all of the financial transactions of the Government of the Northwest Territories, for general communications, and for the central filing service.

The financial section is responsible for the design and implementation of all financial control systems within all Government departments, the preparation and distribution of monthly management reports through the use of the computer, and the financial management of the Consolidated Revenue fund, including cash flow analysis and forecasting.

Supply Services

The Supply Services Division is responsible for the purchase, transportation, warehousing and disposal of materials and equipment for all Departments of the Territorial Government.

New warehousing facilities have been established in Rankin Inlet and Resolute which will provide support to these communities not only in the future but also during the term of the present relocation projects.

The Petroleum, Oil, Lubricants Section maintains a computerized program for the acquisition, control and distribution of bulk petroleum products at all communities where commercial distributors find it uneconomical to operate. Thirty-four tank farms are involved with a total storage capacity of nine million gallons of bulk fuel oil and 1.5 million gallons of gasoline. A \$16,000,000 five-year program to upgrade tank farms and increase storage capacity by five million gallons has been submitted to Treasury Board for approval.

The Transportation Section is responsible for co-ordinating the Eastern Arctic sealift activity with the Ministry of Transport and maintaining liaison with the Northern Transportation Company Limited on all shipments of Government cargo in the Western Arctic. A scheduled chartered east-west air service is operated and all air shipments via regional and local carriers are co-ordinated.

Personnel Services

The Personnel Services Division is presently composed of five sections comprising recruitment, staff training and development, personnel administration, employee accommodation and pay administration. The

recruitment section and the personnel administration section handled 624 appointments to permanent positions. In addition, 71 new units of employee accommodation were built across the Territories.

DEPARTMENT OF PUBLIC SERVICES

Responsibilities

To co-ordinate government services available to the public including court services, legal aid, vital statistics, licensing, fire and safety services, labour standards, workmen's compensation and administration of the Liquor Control System.

Review of the 1974-75

Legal Services

During the year, a revision of the ordinances of the Northwest Territories was completed by the Ordinance Revision Committee, chaired by Mr. Justice W.G. Morrow, with the assistance of the Legal Counsel for legislation. The Revision will be available for distribution in 1975.

General legal services are provided to the Territorial Executive and the several departments of the Territorial Government, including the various boards created under the authority of the Territorial Ordinances. During 1974, the first applications were received under the Criminal Injuries Compensation Ordinance.

Legal Aid

Overall administration of the Northwest Territories Legal Aid Program is in the hands of a Committee established by the Commissioner.

Towards the end of 1974 an experimental Legal Service Centre, supported by Inuit Tapirisat, and financed by federal and territorial grants, was opened at Frobisher. The centre is expected to provide supplementary legal service to the people of Frobisher in particular and some assistance as well to the residents of other communities in Baffin Island. The experiment will be evaluated after a year. The centre is run by a Board of Directors with representation from local organizations in Frobisher such as the Village Council, the Housing Association, the Kativik Community Association, the Hunters' and Trappers' Association, and also other directors drawn from Inuit Tapirisat, the Territorial Government, the Northwest Territories Bar Association, and the Legal Aid Committee.

Administration and Registries

The Land Titles section is experiencing an increased volume of work as the territorial population increases. Land is a valuable commodity at this time. As the Territories continue to grow, so do business opportunities. The Companies Section has shown a 7 per cent increase in workload as new companies register in the Territories. There are an increasing number of businesses incorporating in the Territories.

Highway Transport Board

The number of Certificates of Operating Authority increased to over 200: half were extra-territorial certificates; the other half were evenly divided between intra-territorial and intra-extra-territorial certificates. The number of vehicles and drivers continued to increase throughout the year. Over 13,000 drivers were licensed, over half of whom held chauffeurs' licences. Over 15,000 vehicles were registered, over half of which were private vehicles. The possibility of three-year drivers' licences and "permanent" licence plates for certain vehicles is being considered.

Court Services

The Department of Public Services provides support services for the Judiciary, Juvenile Court and Justice of the Peace Court. Justice is dispensed in the Northwest Territories by regular Supreme and Magistrate Court circuits. Justice is also dispensed throughout the Northwest Territories by the dedicated efforts of Justices of the Peace who dispose of approximately 66 per cent of criminal cases each year.

The Territorial Government also appoints coroners who act under the authority of the Coroners' Ordinance to investigate deaths by accident, violence or by any unexplained cause.

The year 1974 was the first time that the criminal cases were split between Magistrates and Justices of the Peace.

1974 marked the formation of the Northwest Territories Justice of the Peace Association. The Annual Conference, held in Yellowknife in April, was attended by 39 Justices of the Peace from the far reaching areas of the North. The main topics discussed centred around the establishment of a constitution, the election of officers and the passing of several resolutions for presentation to the Government of the Northwest Territories.

Safety Division

The Safety Division enforces and administers the Safety Ordinances, including fire, industrial safety, boilers and pressure vessels, electrical installation, elevator safety, handling of petroleum products and gas installations.

Fire Inspection of public buildings, low cost and northern rental houses, totalled over 4,000 compared with 3,300 in 1973. There are now 46 organized fire departments having more than 550 volunteers, giving over 15,000 voluntary man hours in training and safety inspections.

Thirty-five settlement fire departments received training in fire fighting procedures. The save-a-life and extinguisher training program is designed to train school children in grades 7 - 9 in the method of resuscitation and use of an extinguisher.

Labour and Workers' Compensation

Amendments to the Labour Standards Ordinance came into force on April 1, 1974 providing for a new minimum wage scale of \$2.50 per hour for employees 17 years of age and over, and a graduated downward scale for younger age groups.

In addition, the standard hours of work were reduced to eight hours per day and 44 hours per week for most industries, and to 191 hours per calendar month for those industries permitted to base their working hours on a monthly total. The maximum hours of work were also reduced proportionally.

The Fair Practices Ordinance also received some new emphasis during the year, with an amendment stating that sex and marital status shall not be used as grounds for discrimination in employment or the granting or refusal of accommodation.

The new Workers' Compensation Ordinance significantly improved benefits and procedures. It also provided for the appointment of a three-member Workers' Compensation Board to administer the entire program including the Referee functions which were formerly the responsibility of the Alberta Compensation Board.

During the 1973-74 period, 2,627 claims were processed as opposed to 2,230 for 1972-73; payroll increased from \$95,980,962 to \$123,079,923.

Liquor Control System and Liquor Licensing Board

The Liquor System is responsible for the importing, distribution and sale of liquor to the public and licensees. As well the system

provides administrative support for the Liquor Licensing Board.

Receipts from the sale of liquor were approximately \$8,750,000 during the 1973-74 fiscal year, an increase of 17 per cent over the preceding year. This resulted in part from the normal volume increase and in part from an increase in the retail price implemented in October 1973.

At the same time that the retail prices were increased to offset increased costs, the policy on percentage markups was adjusted to promote the use of lower alcohol content products, such as unfortified table wines rather than the higher content fortified products.

In the first ten months of 1974 the Licensing Board held seven regular meetings and one public hearing.

Consumer Affairs

A Consumer Affairs Division was created in August, 1974. The Division has legal responsibilities covering such consumer concerns as borrowing costs, and prepayment privileges; time sales, forfeitures and seizures; basic warranties, and direct sales at places other than the seller's usual place of business. There is close collaboration with federal authorities in such areas as weight and measures, misleading advertising, agricultural standards and various safety enactments.

DEPARTMENT OF INFORMATION

Responsibilities

To provide a centralized service in English, Inuit and Indian languages to interpret the government's aims and objectives to the public; production of a variety of government publications; operation of the government's central printing unit.

Review of 1974-75

To help streamline the Department's operation, objectives were established and policies developed and instituted in the areas of media relations, advertising, printing and publishing. These policies establish a centralized and co-ordinated information service, eliminating waste and duplication of efforts.

Basic to the media relations policy is the right of the public to easy access to government information. Central to both the advertising and printing policies is the responsibility of the Territorial Government to support northern enterprise whenever possible.

Continued emphasis has been placed on the refinement and, recently, the expansion of the Interpreter-Translator Corps within the Public Relations Division. The addition of six new employees, who completed a five-month training course in February, 1975, increases the corps from nine to 15 members. The Interpreter-Translator Corps, unique in North America, is made up of members who represent the Indian and Inuit languages in the Northwest Territories. Their work continues to play a large part in overcoming the confusion and misunderstandings that occur in a multi-language territory. Plans are also underway to train a small group of corps members in the art of simultaneous interpreting for future sessions of the Council of the Northwest Territories and for conferences requiring such services.

In its attempt to improve the dissemination and two-way flow of information in the Northwest Territories the Department is providing whatever assistance possible to communities wishing to establish local community radio broadcasting stations. Its earlier program to provide grant money for establishment of such stations to incorporated radio societies, had to be set aside until funds can be obtained from the Federal Government. The Department is providing advice and technical information to community groups interested in this form of communications hardware. In addition, it is developing a program production centre in Yellowknife and is in a position, upon request, to provide material from the numerous community radio stations now located in the Territories.

Newspapers are another essential communications tool in the Northwest Territories and to aid in the establishment and continued operation of such papers, the Department is advocating the concept of a community newspaper grant program. The Department is working out a grant schedule along with budgetary considerations for presentation to the government's Executive Committee. This program is for smaller centres in the North where advertising revenue is minimal and where local financial support is insufficient to sustain a community newspaper operation.

The Department's two newsletters, *Tukisiviksat* and *Goinisdav* contain information and pictures concerning developments in the North that affect the daily lives of the Territories' 38,000 residents.

Tukisiviksat is printed in both English and Eskimo syllabics and is produced by the Department's regional office in Frobisher for

distribution to the Arctic regions. *Goinisdav* is produced in Yellowknife in the English language and is translated into the five Indian languages of the Mackenzie District. It is then transcribed on cassette tapes for distribution to chiefs and band councils in the region.

To assist in the production of its publications and to fill the increasing demands of various news and magazine agencies for good quality photographs of the Territories, the Department's photographic darkroom facility has been refined to allow for speedy developing and printing of black and white film and the printing of colour film.

The Publications Division continues to concentrate on the production of books, pamphlets, periodicals, reports and other written material for the public and provision of a centralized service for the sign, advertising and publishing needs of the government.

The Annual Report of the Government of the Northwest Territories continues to be a popular reference book. Its "yearbook" format, colourful content and the fact that it is packed full of information on the North, have dramatically increased demand for the book for private and institutional libraries. The book is sold in bookstores across Canada and to Arctic institutes, universities, and libraries all over the world. There is also a complimentary distribution to all libraries, schools and settlement councils in the Northwest Territories.

Arctic In Colour expanded its market throughout Canada and the United States, with world-wide subscription sales. The magazine has been introducing its readers to all aspects of life in the Northwest Territories and other polar regions. During 1974, the Department of Information called for proposals for the private publishing of *Arctic In Colour Magazine*. Towards the end of the year detailed negotiations were entered into with a private northern publisher and an agreement was reached in early 1975. The government will partially subsidize the magazine with incentives built into the agreement so that as soon as the operation becomes profitable it will be an entirely private venture.

The Department of Information also prepared a series of pamphlets, posters and advertisements for the Clerk of the Council for use in an Information-Education program on the Council and the Council election. Advertising programs were prepared on behalf of all government departments and placed in the northern newspapers and over the CBC "Anik" television

service, in accordance with the advertising policy which centralized the placement of government advertising in the Department Information.

To better implement the printing policy which centralized the placement of commercial printing in the Department of Information, the Department re-organized its printing operation into a printing bureau with a commercial placement unit and an internal printing unit. Special efforts are made to place government printing with northern printers whenever possible.

DEPARTMENT OF PUBLIC WORKS

Responsibilities

To plan, build or buy and to maintain and manage the government-owned physical plants in the Territories, and working with Federal Government departments, to construct and maintain a highway system, as well as a network of settlement airstrips.

Review of 1974-75

Planning and Administrative Division

Provision is made for long- and short-range planning service for the design of departmental objectives, policies and procedures, the Capital Construction and Operation and Maintenance program. This is an aid toward the development of the Department and the fulfilment of its service role. The Division co-ordinates and compiles departmental financial forecasts and estimates; controls and analyses departmental budgets; and provides financial management of contract and direction to the divisions and regional offices on all financial matters.

Highways Division

In 1974, 35 miles of the Dempster Highway connecting Fort McPherson and Arctic Red River were taken over from the Federal Government for maintenance. With the completion of another 35 mile stretch of highway between Arctic Red River and Inuvik, a network of permanent and winter roads will be operative between the Mackenzie Delta communities of Fort McPherson, Arctic Red River, Inuvik, Aklavik and Tuktoyaktuk. It is anticipated with the completion of the Dempster and Mackenzie Highways these communities will have two links to the southern highway network, allowing a circle tour through the Yukon and Northwest Territories, which will be an attractive feature for tourists.

The vessel *M.V. Johnny Berens* was operated by a contractor on the Liard River near Fort Simpson and the *M.V. Merv Hardie* was operated by government employees on the Mackenzie River near Fort Providence. The *M.V. McQuesten* was prepared for transfer and operation at Arctic Red River in 1975 as an interim ferry until a new vessel can be constructed and ready when the Dempster Highway is completed.

Road construction projects financed by the Federal Department of Indian and Northern Affairs consisted of the Hay River Highway within the municipality of Hay River, the Yellowknife Highway between Inuvik and Yellowknife, eleven miles of the Fort Smith Highway, and some improvements on the Ingraham Trail. Surveys were carried out on the Canol Road near the Yukon border, on the Jean Marie River winter road and along the Mackenzie and Yellowknife Highways. Approximately \$400,000 was spent on the design and execution of these projects.

Operation and Maintenance Division

The Operation and Maintenance Division provides professional and technical assistance and direction to the Regional D.P.W. Establishments and initiates departmental policy and procedures for maintenance and repair.

During the past year new personnel with a wide range of field experience have been appointed in many key positions. This has strengthened the Department and will be helpful in standardizing operating and maintenance management procedures. The Equipment Section has been working in close cooperation with the Department of Local Government to assess settlement equipment needs and to determine equipment inventories. The sudden rise in equipment prices has necessitated re-evaluation of the economics of rebuilding certain items of older equipment.

Project Management Division

The Project Management Division and its consultants are charged with the responsibility of carrying out the Government's Capital Construction Program. The rapid escalation of construction costs caused the cancellation of several projects scheduled for construction, so the total number of projects of various kinds dropped from 350 last year to 30 this year. The total value of the program was \$7,523,000, even though the Northern Territory Rental Housing Program was taken over by the NWT Housing Corporation.

Staff housing still remains a very important item, with the construction of 76 single family units, a 26 unit apartment building and the proposed housing renewal program in Frobisher.

The major school construction projects that took place in 1974 were at Spence Bay, Eskimo Point, Fort Smith and a start made on the foundations at Fort McPherson.

Projects of special interest include the construction of facilities to accommodate the Keewatin Regional Headquarters in Rankin Inlet, which are now near completion and involvement with the new mining community at Strathcona Sound.

One project that already at its early stages is causing considerable interest, both within and outside the Territories, is the relocation of the townsite at Resolute. A team of consultants, headed by Ralph Erskine, an architect-planner with an international reputation for imaginative work in arctic townplanning, is developing the designs for the new community and work on site preparation and installation of services commenced this summer after full consultation with the local people.

EXECUTIVE SECRETARIAT

Responsibilities

To provide administrative, policy and staff support to the Executive Committee and its individual members, to co-ordinate planning for Territorial Government programs and policies and for the analysis of existing programs and policies as directed by the executive, and to administer the process of executive decision-making and communication, in an efficient and orderly manner.

Review of 1974-75 Operations

Audit Bureau

The audit program was revised in 1974 to meet the changing needs brought about with program policy and budgeting and the expressed wishes of the Territorial Council. The major change is that the budget as approved by Council is the audit base from which the Auditor General may work towards completing his report to Council.

The program includes the audit grants to settlement councils and the Audit Bureau has received appointments as external auditors from all settlements which have achieved hamlet or village status. Auditing time has increased because of the increased responsibilities of local government councils.

The Audit Bureau, in conjunction with the Employment Division of Local Government, has developed a program for the training of Northerners in accounting and auditing. Besides the practical experience gained by working in the bureau, the trainees are enrolled in recognized accounting programs which lead to professional accounting designations such as Certified General Accountants or Registered Industrial Accountants.

Financial Co-ordination and Program Analysis

The Financial Co-ordination and Program Analysis Division is responsible for co-ordinating the over-all financial planning of the Territorial Government. During 1974, escalating costs through inflation required a major study into the effects on the Territorial Capital programs. A result of this study was the reduction of many capital projects. Other major studies centred around the improvement of financial planning and budgeting procedures and the development of a Management Financial Information System.

Petroleum Resource Development Project Group

Over the past year the Territorial Government has again been actively involved in the planning and implementation of projects related to the Mackenzie Highway and proposed Mackenzie Valley Gas Pipeline.

The immediate objective of the Hire North program, which is constructing the Mackenzie Highway north to the Arctic, is to provide training and employment opportunities for northern residents. The final aim is to establish a crew of trained native northern residents who can take advantage of highway-pipeline construction employment. The Training-Construction Section situated at River Between Two Mountains, about 100 miles north of Fort Simpson, continued to clear and build a road-bed during the year. Approximately 12 trainees were on the job at any one time. Forty personnel completed training on road construction equipment during 1974. Both the clearing activities of Hire North and the training — construction activities continued through the 1974-75 winter season.

Personnel Policy and Planning

As an extension of the classification and pay review program which commenced in 1973, a task force composed of senior managers was established to review all

aspects of Personnel Management within the Northwest Territories Public Service. The report of this task force was presented to the Executive in July. Several problems were identified very early in the study and remedial action was taken during the joint consultation sessions which preceded the collective bargaining sessions or as part of the negotiations. Other recommendations were implemented during the remainder of the year — with still others having to be delayed until the new fiscal year. One recommendation of the Task Force calling for a completely revised classification system dramatically affected the work of the Personnel Policy and Planning Division.

The negotiations with the Northwest Territories Teachers' Association and the Northwest Territories Public Service Association were conducted during March and April. The salary increases granted averaged about 22 per cent over a two year contract. In addition, several terms and conditions of employment were altered as a method of coping with some of the current employment problems.

Program Policy and Planning

The Program Policy and Planning Division has been involved in several major planning and research projects in 1974. Examples are: Grants to Communities; Metric Conversion in the Northwest Territories; Outpost Camps; The provision of Program Information to Residents of the Northwest Territories; the Applicability of Territorial Government Programs to Long Term Visitors to the Northwest Territories. The Division has also been involved in developing the Northwest Territories' position in the Federal Government program to turn over control of airports within the Northwest Territories to the Territorial Government or to local communities.

The Division has responsibility for liaison with the Northwest Territories Historical Advisory Board and has been responsible for the erection of historical markers at Fort McPherson and Fort Smith, NWT. Steps have been taken to implement the NWT Museum Program which was approved by the Territorial Council in 1973. Planning for the new museum in Yellowknife is almost completed and a start has been made on the actual construction. It is hoped that this will be finished by 1976. A co-ordinator of historical programs has been hired and it is planned that he will oversee the establishment of the new museum and also develop extension programs to service community

museums and historical societies throughout the Northwest Territories.

Science Division

A marked increase in the level of scientific research in the Northwest Territories has resulted in problems as well as in potential benefits. The old scientists and explorers ordinance was, therefore, brought up to date at the June session of Council. The new Scientists Ordinance, like its predecessor, requires the licensing of research carried out in the Territories. Steps have been taken to make this requirement better known throughout the scientific community. The main purposes of licensing are to ensure that communities affected are adequately informed and consulted, and that the results of research are available for use in the Territories.

Special Projects and Development

The Territorial Government has been actively involved in the planning and implementation of major projects related to development in the High Arctic. These projects include the move of the Churchill offices to Rankin Inlet, the relocation of the townsite at Resolute and the development of a townsite at Strathcona Sound — a new lead-zinc development carried out by the Government of Canada and Mineral Resources International.

The lead-zinc mine at Strathcona Sound is the first large industry in the High Arctic. The Territorial Government is involved in ensuring Inuit employment and participation in townsite development. The preliminary planning for this project is complete, and construction has started on the housing to accommodate the construction crews. This Government intends, through employment policies and in close liaison with the mining company, to ensure that by 1978, 60 per cent of the work force in the mining operation will be Inuit. Training programs are being set up to train Inuit for all types of jobs that are required in such a development. It is anticipated that the mine will go into operation by the fall of 1976.

CLERK OF THE COUNCIL

Responsibilities

To provide all necessary administrative and support services to council during sessions and to a large extent to the standing and special committees of council both during sessions and throughout the year.

Review of 1974-75

The Clerk of the Council is charged with the liaison function with the Chief Election Officer and with all duties relating to Territorial elections carried out by the NWT Government. Initial planning for the 1975 election began in late 1973. The Clerk and the Clerk Assistant met with election officials to consider means by which election procedures could be adapted or modified to make them more suited to Territorial conditions. Ways were also examined to ensure that a minimum of difficulty would be encountered by the Returning Officer in charge of each constituency and by the Chief Electoral Officer's officials during the 1975 election.

Returning Officers for each of the 15 constituencies were appointed by the Commissioner in July, 1974. At the beginning of August, election officials from Ottawa travelled to Yellowknife to present a three-day Returning Officers instruction course to thoroughly familiarize these persons with the duties they would carry out.

At the direction of the Standing Committee of Indemnities and Allowances a most comprehensive comparison of expense allowances paid to provincial legislators was carried out, resulting in a revision of constituency expense allowances payable to Members of Council.

NORTHWEST TERRITORIES HOUSING CORPORATION

Responsibilities

To develop and implement all government sponsored housing programs, excepting Northwest Territories Government employees accommodation.

Review of 1974-75

During 1974 the Corporation constructed 88 rental purchase units in 15 settlements and a 10 unit public housing unit at Rankin Inlet. Local organizations or individuals were used except in four settlements where there was no desire by the people to become involved in construction.

Twenty single-family units of public housing at Hay River were completed by "Work Arctic" a non-profit organization. An additional 20 unit Public Housing Project under construction at Hay River and should be ready for occupancy early in 1975. In Fort Smith, a 10 unit public housing project has started with the construction of two prototype log-design houses. If successful,

the balance of eight units will be built next spring.

The development of Local Housing Associations and Housing Authorities has continued and they are now assuming greater responsibility in the Rental Purchase Program. During 1974 more than \$3,600,000 was made available to 44 Housing Associations and \$350,000 to 13 Housing Authorities by way of accountable grants used to pay for utilities, services, maintenance, materials, labour and administration.

To provide adequate accommodation at reasonable rates for senior citizens, a total of 65 units are now in operation; eight more units are currently under construction at Fort Good Hope and will be ready for occupancy in early 1975.

To assist families in constructing homes from locally harvested materials where no subsidized housing exists, 10 grants in the total amount of \$50,000 have been issued.

A total of \$190,000 was made available to provide first mortgage loans to persons who do not qualify for N.H.A. Loans. Sixteen Territorial second mortgages of \$2,000 each were made available for distribution through Central Mortgage and Housing Corporation for those residents who received National Housing Act first mortgage loans and required additional funds to offset the higher cost of labour and transportation in the Northwest Territories. Successful negotiations with Central Mortgage and Housing Corporation were carried out for the development and implementation of the Rural Native Housing Program in 1975.

A Trunor log lathe and cut-off machine purchased in 1974 is now set up and operational in Fort Resolution. This machine turns logs to an equal diameter of six to 10 inches and in lengths up to 20 feet. In one operation it turns the logs, saddles the logs and provides an implant for insulation. When fully operational, the lathe will produce one house package a day. The lathe and associated equipment was obtained by the Corporation in an attempt to utilize native raw materials for home construction and at the same time produce log houses that would be acceptable to users and mortgage lending institutions at a lesser cost than conventional constructed homes.

The research has been completed for two programs, a Home Purchase Grant, to assist families in the Northwest Territories to construct or purchase a home, and a Home

Operations Grant to encourage home ownership by subsidizing home operating costs. A consulting firm has been hired to formulate policy, procedure and forecast operating costs prior to presentation to the Minister of Indian Affairs and Northern Development through the Commissioner and Council.

GOVERNMENT OF THE YUKON TERRITORY

ADMINISTRATION OF THE YUKON TERRITORY

Responsibilities

To administer the Yukon Territory in accordance with the Yukon Act, Ordinances of the Yukon Territory and other federal laws applicable thereto.

COUNCIL OF THE YUKON TERRITORY

Responsibilities

To exercise legislative authority as is designated by the Yukon Act.

ADMINISTRATIVE AND LEGISLATIVE SUPPORT SERVICES

Clerk of Council

Responsibilities

The Clerk of Council:

- ensures that the activities of the Executive Committee and its subcommittees are co-ordinated and that their decisions are implemented.
- provides legislative support services to the Yukon Council.
- provides administrative support services to the Commissioner, and
- provides informational support services to all Yukon Territorial Government departments concerning changes in legislation and internal policy guidelines.

Review of 1974-75

During the 1974-75 fiscal year, Council held three sessions. The first session convened on March 20, 1975. Among the legislation considered by Council was the Electoral Boundaries Commission Ordinance

which gave effect to the establishment of a Commission. The Commission was formulated in May, 1974 and completed its report on the re-distribution of electoral boundaries within the Territory by June 30, 1975.

The Clerk's office provided the research assistance to the Electoral Boundaries Commission. Based on the Commission's report, Council amended the Elections Ordinance which increased the constituency ridings from seven to 12. The final session of the 22nd Wholly Elected Council prorogued in June, 1974. This was the last seven-member Council. At this session, by motion, it was recommended that all appointments of Council members to Committees be rescinded after October 5, 1974, the date on which the legal life of Council expired. As a consequence of this motion, members of the Executive Committee and of the Advisory Committee on Finance resigned their positions on October 5, 1974 and the Government reverted to government officials.

The Commissioner called a Territorial election for November 1974 to be conducted for 12 constituency districts. The Territorial election was run under the aegis of the Chief Returning Officer in Ottawa. The Clerk acted as liaison officer for the Chief Electoral Officer. In December of 1974 a one-day Council session was held. The Commissioner administered oaths of office to members of the 23rd Wholly Elected Council. At this session appointments of house officers were made by the members. Concurrent with the expansion of Council membership, the Executive Committee was adjusted to allow three of its members to be designated by Council. Recommendations were submitted to the Commissioner from the Council for appointing elected members to the committees. The Commissioner confirmed the appointments

of H. Watson as member responsible for Health, Welfare and Rehabilitation, G. McIntyre as member responsible for Education and J.K. McKinnon as member responsible for Local Government by administering oaths of office to the elected members in January 1975. The Clerk's office re-organized to accommodate growth in both administrative and legislative services.

The Consolidation of Ordinances Program which began in 1971 progressed to the current year's amendments.

A five-day tour of the Territory, hosted by the Commissioner, was co-ordinated and programmed by the Clerk of Council. The purpose of the tour was to introduce the Yukon to businessmen who had expressed interest in its resources and to better acquaint members of Council and Government personnel to the conditions in the Territory.

During the fiscal year, the Clerk's office made the necessary arrangements for the Commissioner, who on behalf of the Government of Canada, hosted Ambassadors who came from around the world to visit the Yukon in July 1971.

In February 1975, the Yukon was honoured by a visit from the Honourable Judd Buchanan, Minister of Indian Affairs and Northern Development. During his visit to Whitehorse, Mr. Buchanan announced the appointment of Commissioner Smith as Chairman of the Northern Canada Power Commission.

Plans for 1975-76

Two major legislative sessions of Council are planned for 1975 as well as the 1976 Spring Budget Session. Administrative aspects of the transfer of government departments to the new territorial building are

being handled by a subcommittee. The territorial building will be ready for occupancy sometime in 1976. Initiated by the 1974 inspection of regulations, a revision of the regulations, procedures and publications will be programmed. A complete review of the Policy and Procedural Manual will be conducted with the purpose of making use of the manual more effective. It is anticipated that dignitaries will be visiting the Yukon this summer for with the Clerk's office will be making the necessary arrangements.

Long-term Plans

A committee system of the Yukon Council could develop. A select Committee on Procedures and Privileges was established by Council at the 1975(1st) session.

Territorial elections are scheduled for 1978, continuing to be run under the aegis of the Chief Electoral Officer in Ottawa. In the Commissioner's opening remarks to Council in the 1974 (4th) Session he made the commitment to Council of phasing out one appointed member of the Executive Committee during the life of the 23rd Council; thus giving a majority to the elected members. Following the deletion of the one member, will be the reassignment of portfolio responsibilities.

Statistical and Planning Adviser

Responsibilities

Primarily responsible for maintaining a statistical Unit within the Yukon Territorial Government to:

- establish stronger links and efficient communications channels with Statistics Canada and other external data-collecting agencies;
- conduct liaison with all federal and territorial data generators;
- develop an adequate data and information base and a central index file describing its contents so as to enable Territorial Government departments and other data users to extract desired information;
- conduct surveys jointly with Statistics Canada; and
- answer enquiries and request for information on Yukon economy from businessmen, research students, etc.

Review of 1974-75

Development of a comprehensive compendium of statistics relating to all aspects of life in Yukon during the year. Research continued in relation to the compilation of existing statistics under the title Yukon Statistical Review.

Liaison with Statistics Canada proved beneficial in achieving an update of census geographical areas as well as an agreement to examine revisions in the population estimates and projections.

The Statistical and Planning Adviser developed a strong relationship with the Alberta Bureau of Statistics which proved to be most beneficial in the field of Federal-Provincial conferences on various subjects related to census.

Plans for 1975-76

Publication of the Yukon Statistical Review with arrangements to update the Review every quarter.

Participate with Statistics Canada and the Department of Indian and Northern Affairs in conducting a mini labour force survey in Yukon.

Conduct liaison with the Department of Indian and Northern Affairs regarding the development of a comprehensive compendium of economic accounts for Yukon.

Compile statistical profiles of individual Yukon communities on the basis of information available from the 1971 Census and other sources.

Long-term Plans

Participate in the planning and conduct of the 1976 Census in the Yukon.

Land Claims Secretariat

Responsibilities

To provide research and administrative services to the Commissioner and for the Government of the Yukon Territory on matters concerning Yukon Indian Land Claim Negotiations.

Review of 1974-75

During 1974-75, the Secretariat staff consisted of a research administrator, research assistant/typist, legal researcher for the full year, and a draftsman and anthropologist who finished their work in the early part of the year.

The Secretariat was active in formulating a YTG Position and Analysis on the Indian

Land Claims and in taking an active involvement in government meetings and informal land claim meetings.

Plans for 1975-76

The Secretariat will continue to provide necessary research and administrative services for negotiating sessions and related activities throughout the year.

Long-term Plans

The Secretariat will maintain its activities as required for the duration of the Yukon Indian Land Claim Negotiations.

Internal Auditor

Responsibilities

To develop audit programs and conduct operational, financial and legislative audits of all departments.

Review of 1974-75

During the first full year of operations principal activities were:

- audits under the Fuel Oil Tax Ordinance
- development of a collection system under the new Tobacco Tax Ordinance
- Audit of the Workmen's Compensation Fund for the year ended December 31, 1974
- implementation of recommendations of the Auditor General

Plans for 1975-76

Activities in the above areas will continue to be a priority; some expansion of activities into other areas will be undertaken.

Long-term Plans

Development of a comprehensive audit function at the Territorial Level.

Personnel Adviser

Responsibilities

The Central Personnel Office is responsible for recruiting and selecting Civil Servants and Teachers; job evaluation and pay administration; administering and interpreting the Collective Agreements; contract negotiations; staff established control and organization analysis; employees appraisal, safety, training and the administration of fringe benefit programs.

Review of 1974-75

Following table represents the recruitment activity during the fiscal year:

| | | |
|---|--------------|--------------|
| Civil Service — Permanent appointments: | | |
| Yukon residents | | 280 |
| Internal promotions | | 52 |
| Outside residents | | 43 |
| Sub-Total | | 375 |
| Internal transfers | | 28 |
| Civil Service — casual appointments | 1,145 | |
| Total civil service and casual appointments | | 1,548 |
| Teacher — Permanent appointments: | | |
| Yukon Residents | | 14 |
| Outside residents | | 58 |
| Sub-Total | | 72 |
| Kindergarten instructor appointments | | 19 |
| Total teacher & kindergarten instructor appointments | | 91 |
| Total Government Appointments | 1,639 | |

Of the 375 permanent civil service appointments 89 percent were made from local residents of the Territory. Turnover by resignations represented 33 percent on a base of 936 full-time and part-time permanent positions. Actual movement which includes appointments, promotions and transfers represented 43 percent, excluding teachers and kindergarten instructors.

The following table represents recruitment activity over the last five years, excluding transfers:

Job Evaluation and Pay Administration

Approximately 265 position transactions and 47 classification and pay plan amendments were processed during the course of the fiscal year. In addition, a number of class specifications were drafted and printed for distribution throughout the government service. The majority of the 265 position classification transactions were as a result of completing a major clerical, typist and stenographic class series review. In addition, a class series review of the Game Guardian and Biologist classes was conducted and completed.

The following table represents classification and pay plan transactions over the past five years:

| Fiscal Year | Position Transactions | Pay Plan Amendments |
|-------------|-----------------------|---------------------|
| 74 - 75 | 265 | 47 |
| 73 - 74 | 166 | 38 |
| 72 - 73 | 141 | 50 |
| 71 - 72 | 215 | 45 |
| 70 - 71 | 104 | 52 |

Staff Development and Training

Approximately 202 employees received some form of financial assistance from the Central Personnel Office during the fiscal year to participate in training seminars, courses or conferences, or to attend night school or complete correspondence courses.

A considerable number of employees participated in "First Aid" courses offered in Whitehorse and outside of the headquarters area. In addition, employees attended an "Accident Prevention Course for Supervisors", an "Interviewing Techniques Course", "Introduction to Supervision Course", "Investigation Procedures and Techniques", "Mechanic Upgrading", supervisory and related management personnel seminars. The Federal Bureau of Staff Development and Training offered a course in Whitehorse for the first time. The course was specifically designed for the Yukon Territorial Government and approximately 30 senior officials of the Government attended. The five-day seminar was oriented to "Planning, Programming and Budgeting" within the framework of the Territorial Government's structure. One employee completed a year's educational leave for a Masters Degree and another employee is now attending the University of Alberta. As in the past, a number of employees enrolled in night school and correspondence courses related to accounting, personnel and secretarial occupations.

The following table represents training activity over the past five years:

| Fiscal Year | Training |
|-------------|----------|
| 74 - 75 | 202 |
| 73 - 74 | 150 |
| 72 - 73 | 109 |
| 71 - 72 | 36 |
| 70 - 71 | 12 |

CIVIL SERVICE

| Fiscal Year | Permanent Appointments Yukon | Permanent Appointments Outside | Total Permanent Appointments | Percentage Yukon Residents Per Cent | Casual Appointments | Total Appointments |
|-------------|------------------------------|--------------------------------|------------------------------|-------------------------------------|---------------------|--------------------|
| 74 - 75 | 332 | 43 | 375 | 89 | 1,145 | 1,520 |
| 73 - 74 | 362 | 21 | 383 | 95 | 1,353 | 1,736 |
| 72 - 73 | 368 | 33 | 401 | 92 | 1,344 | 1,745 |
| 71 - 72 | 300 | 30 | 330 | 91 | 845 | 1,246 |
| 70 - 71 | 299 | 26 | 325 | 92 | 672 | 997 |

TEACHERS

| Fiscal Year | Permanent Appointments Yukon | Permanent Appointments Outside | Total Permanent Appointments | Percentage Yukon Residents Per Cent |
|-------------|------------------------------|--------------------------------|------------------------------|-------------------------------------|
| 74 - 75 | 14 | 58 | 72 | 19 |
| 73 - 74 | 18 | 36 | 54 | 33 |
| 72 - 73 | 15 | 47 | 62 | 24 |
| 71 - 72 | — | 72 | — | — |
| 70 - 71 | 21 | 63 | 84 | 25 |

Staff Relations

With the amendments to the School Ordinance, the Yukon Teachers' Association became a certified Bargaining Agent on behalf of Yukon Teachers and the Yukon Territorial Government entered into its first binding Collective Agreement with the teachers. The contract was effective September 1st, 1974 to August 31st, 1976.

In the latter part of the fiscal year, the Public Service Alliance of Canada served notice to bargain for a renewal of the existing collective agreement, which expired on March 31st, 1975. A number of amendments were made to the current collective agreement during the course of the year and several grievances were referred to adjudication, including the first grievance under the Yukon Teachers' Staff Relations Board.

Plans for 1975-76

The Public Service Alliance of Canada and the Employer are presently negotiating for the renewal of the expired collective agreement and it is hoped that the parties will be able to reach agreement shortly. In addition, in the latter part of the fiscal year negotiations will commence with the Yukon Teachers' Association to renew their agreement effective September 1st, 1976.

A number of re-surveys are presently under way and it is anticipated that a review of the Social Worker and Probation Officer Class series, including the Engineering Class series, will be completed during the course of the fiscal year.

The Recruitment Section, in conjunction with the Department of Education, completed in the latter part of the fiscal year an updating of the Teacher Recruitment brochure and this is presently being utilized with respect to the recruitment of teachers for the 1975-76 school year.

Emphasis will be placed on updating the staff establishment print-out in an attempt to indicate vacant positions on a monthly basis per department.

During the course of the fiscal year safety committees were established in Whitehorse and Dawson City. It is anticipated that during the 1975-76 fiscal year safety committees will be established in other communities throughout the Yukon. Emphasis will be placed on conducting first aid courses outside Whitehorse, in addition to continuing with the present first aid courses offered for employees located in Whitehorse.

The Personnel Department will again be visiting regional offices outside of the central headquarters area to clarify benefit programs, questions pertaining to the interpretation and application of the renewal of the collective agreement, and to answer enquiries with respect to superannuation and related personnel programs.

Long-term Plans

At the time that the Central Personnel Office is located in the Capital Building, it is hoped that space will permit a comprehensive employee orientation program at the time of hire. This would include a seminar on the organization of the Government, its policies and objectives, a run-down of the Government's organization by Departments, including its legislative authority and the role of the Legislative Council and Executive Committee.

Directorate of Intergovernmental Affairs

Responsibilities

This Directorate was established August 20, 1974 with responsibilities which span the complete spectrum of governmental activities in the North. The Directorate provides support services to the office of the Commissioner in the co-ordination of federal and territorial programs and in the general area of interdepartmental and intergovernmental affairs. Responsibilities also encompass the administration of the Federal Interdepartmental Co-ordinating Committee (FICC) and the provision of secretariat services to the General Committee, the Steering Committee and standing sub-committees of FICC.

Review of 1974-75

With the establishment of the new Directorate the Territorial Government assumed a larger and more responsible role in all Federal government activities affecting the Yukon and its people, and established more effective communications and a more positive liaison with the (Federal) Advisory Committee and Northern Development. The Yukon Government's participation in the work of the various ACND committees was expanded considerably during the year and a high degree of interdepartmental communication and positive working relationships have been established.

During the year in review, the Territorial Government had official representation on the following ACND Committees:

- General Committee
- Committee on Transportation
- Committee on Science & Technology
- Committee on Northern Communications
- Committee on Employment of Native Northerners
- Federal-Territorial Economic Planning Committee
- Interdepartmental Advisory Committee on Northern Roads.

A number of meetings of the above noted Committees were attended and a continuing liaison was maintained with the various Committees and the Secretariat in relation to activities and projects affecting the Yukon. The first meeting in the Yukon of a Committee of ACND was held November 18, 1974 when the Committee on Northern Communications met in Whitehorse. This

proved to be a most successful and productive meeting and pointed up the need to hold more frequent meetings of ACND Committees in the North when dealing with northern problems and matters affecting northern development.

The Federal Interdepartmental Co-ordinating Committee held regular quarterly meetings during 1974-75. FICC is chaired by the Commissioner of the Yukon and membership is composed of the senior representative in Yukon of each Federal Government Department and Crown Agency as well as a senior official of the Yukon Government. During the year in review, FICC carried out the following broad objectives: the co-ordination of the activities of all Federal Government departments and agencies in Yukon, and the establishment of interdepartmental communication and continuing liaison between all government agencies to bring about a commonality in the resolution of problems. The FICC is a standing Committee of the Advisory Committee on Northern Development and ACND Document ND-437 dated February 6, 1967 establishes Yukon's Federal Interdepartmental Co-ordinating Committee as part of the ACND Committee structure.

This Directorate is responsible also for the administration of the Yukon Manpower-Needs Committee and for the provision of secretariat services to this Committee. The Manpower-Needs Committee was restructured during the year and a sub-committee on Manpower Training and Research Needs was established.

The Manpower-Needs Committee, which was established jointly by the Commissioner and the Minister of Manpower and Immigration under the provision of the Adult Occupational Training Act Agreement (1974) assumed responsibility for the assessment of current and anticipated manpower needs in the Yukon including the identification of training needs of the labour market and is the vehicle for consultation, recommending and monitoring of Federal and Territorial Manpower Programs to meet identified priority needs. Both the Manpower-Needs Committee and its sub-committee have representation from the federal and territorial Governments.

Since its inception in August, the Directorate has been actively developing its role in the area of intergovernmental affairs and good progress has been achieved in this very important area of governmental relationships.

Plans for 1975-76

The Directorate will continue to be the focal point for the co-ordination of all activities and programs of an interdepartmental and intergovernmental nature. It will also continue to be actively involved in the work of the Advisory Committee on Northern Development and will maintain close liaison with ACND on all activities and developmental plans affecting the Yukon. Efforts will also be directed toward the continuing development of FICC into a strong and effective organization.

The Directorate will endeavour to broaden its role in the area of intergovernmental relationships particularly with jurisdictions bordering on the Yukon. It is hoped because of our interdependence and geographic ties that a forum of continuing liaison and communication can be established this year with these neighbouring jurisdictions.

Long-term Plans

To develop the Directorate into an effective instrument of government which will continue to play an important role in the co-ordination of all government activities in order to ensure an orderly pattern of growth in all areas of social and economic development in the Yukon.

DEPARTMENT OF EDUCATION

Responsibilities

The Department of Education is basically responsible for the provision of elementary and secondary education for the children in the Yukon Territory in accordance with the provisions of the School Ordinance. In addition, the Vocational Branch within the Department is responsible for vocational, technical and apprenticeship training for adults throughout the Territory.

The Recreation Branch of the Department of Education is responsible for the development, initiation, and operation of fitness and recreation programs for people of all ages throughout the Territory.

Review of 1974-75

Elementary and Secondary Schools

In September, 1974, the total enrolment (inclusive of kindergarten students who are being counted as part of the Yukon school population for the first time) in 23 schools was 5,286. On March 31, 1975 the enrolment had declined to 5,231. The decline of one per cent in the school population during

the first seven months of the 1974-75 school year can be attributed to two reasons, viz.

1. a number of Grade 12 students completing their programs at the end of the first semester, and
2. the "transfer" of students to schools outside Yukon and the "normal" expected "drop-out" of students at the secondary level to seek employment. It is interesting to note that this "drop-out" and transfer figure has been declining since 1972 when it stood at 3.1 per cent of the student population.

During the 1974-75 fiscal year, construction was completed on an addition to the Robert Service School in Dawson City. The addition includes a gymnasium with ancillary facilities, two classrooms and an administrative area. During construction of the addition, the electrical and heating systems in the original school were either upgraded or replaced and the former activity room was converted into a library and art room.

Renovations to the former teacherage (the St. Elias Block) in downtown Whitehorse were completed during the summer of 1974 and the residence now accommodates a maximum of 23 female students from rural communities who are completing their secondary education in Whitehorse. Construction began on the new school at Ross River and it is anticipated that it will be completed in the fall of 1975. The new school will provide six classrooms, some of which are multi-purpose, and a gymnasium with ancillary facilities.

A revised School Ordinance was assented to by the Territorial Council on June 27th, 1974. The revisions provided for the inclusion of kindergartens in the school system and, as a result, kindergartens were incorporated into schools in September 1974. In the past, kindergartens were operated as joint ventures between the Department of Education and various community kindergarten associations. The Department of Education provided grants in the form of instructors' salaries, basic equipment and instructional supplies while the kindergarten associations provided the accommodation, janitorial services, transportation and "extra" supplies and equipment. With the inclusion of kindergartens in the school system, the total operational cost of kindergartens is now the responsibility of the Department of Education. The kindergarten enrolment as of March 31, 1975 was 433 as compared to 351 on March 31, 1974.

The Department of Education continued its assistance program relative to post-secondary education. Grants and bursaries totalling \$180,402 were provided to 190 Yukon students attending post-secondary educational institutions outside the Territory. In addition, 42 certificates of eligibility for Canada Student Loans were issued.

The program of remedial instruction initiated in September 1973 and funded by a grant from the Department of Manpower under its Local Employment Assistance Program, continued through the past year. It is anticipated that the Department of Manpower will continue funding the program through the 1975-76 fiscal year.

Plans for 1975-76

Construction of the new school at Ross River will be completed. It was anticipated that additional school facilities would be planned and constructed in Mayo. A fire on the night of April 9-10, 1975 almost totally destroyed the Mayo school. Only the four portable classrooms and the gymnasium with its ancillary facilities (including the heating plant) were saved. As a result, the top priority item for 1975-76 will be the reconstruction of the Mayo facilities. The assessment of educational facilities in the Whitehorse area will continue and planning for future expansion of the school facilities will be undertaken.

The planning and construction of a French Language Centre will be completed by September 1975. A capital grant from the Department of the Secretary of State will finance the project. The Centre will be located in the F.H. Collins Senior Secondary School and will be utilized to instruct Territorial Government employees who wish to improve their French language skills. The Centre will also supplement the French language instructional program at F.H. Collins and provide a meeting and training centre for French teachers.

Plans have been completed for the implementation of the *En Avant* French language program in our elementary schools (Grades 5, 6 and 7) effective September 1975. A program of evaluation, selection and implementation of a junior secondary French language curriculum is to be undertaken. Finally, the development and refinement of locally-developed Social Studies units is to continue.

Long-term Plans

It had been anticipated that the provision of additional school facilities at Mayo would have completed our facilities expansion program. However, the anticipated closure of the Lower Post Indian School (operated by the Department of Indian Affairs and Northern Development), the anticipated population growth at Haines Junction as a result of increased activities related to the development of Kluane National Park and finally, the anticipated population growth at Faro as a result of expansion by Anvil Mining may well result in overcrowding in our schools at Watson Lake, Haines Junction and Faro. Therefore, long-range planning to deal with the population increases anticipated in these communities will be undertaken. Continued emphasis will be placed on the local development of curriculum which is relevant in our particular situation.

Vocational/Industrial Training and Rehabilitation

Academic upgrading and pre-employment training courses are provided in Whitehorse at the Yukon Vocational Technical and Training Centre and in the outlying communities. Both full-time day and night courses are available.

Academic Upgrading

Academic upgrading courses are offered to provide for four levels of requirements:

1. Basic literacy for people with a level of education up to grade four
2. Basic education in mathematics and communication skills to a grade 10 level for people with a grade five to nine level of education. A program in lifeskills is offered in conjunction with the upgrading.
3. B.T.S.D. III — For those who require only a few months of upgrading to train them to a grade 10 level in science, mathematics and communications; continuous intake.
4. B.T.S.D. IV — For people with at least a grade 10 and who have not attended school for a number of years and who wish to acquire the necessary subjects for entry as a mature student to a technical school or university.

Community Courses

The major emphasis in the communities is on academic upgrading from illiteracy to the grade 10 level. Educational upgrading

courses were provided in 10 communities in 1974 with an enrolment of about 185. The instructors were locally trained for six weeks and supervised by a trained educator.

A program of Home Education, available to wives and mothers in the communities, covers home care, nutrition and budgeting.

Two management credit courses were provided. The total enrolment was 71, many of whom were on both courses.

In addition, a number of other courses were arranged and offered such as Defensive Driving and First Aid.

The Industrial Training Co-ordinator also is involved with working with industries in arrangements for training involved in the Canada Manpower and Immigration Training-in-Industry programs.

Vocational Training

The Y.V.T.T.C. provides 15 different pre-employment courses on a regular basis each year. Eleven are 10 months long, three are five months long (offered twice a year), and one course is four months long, also offered twice a year. Four of the pre-employment courses are trades courses and on successful completion provide one year credit towards an apprenticeship. The welding course which is non-apprenticeable qualifies a person to test for a B.C. DPW No. 3 welding ticket; three courses are commercial courses, and the Nursing Assistance course provides a C.N.A. certificate recognized in the provinces. The remaining courses of Arts and Crafts, Food Services, Drafting, Heavy Equipment Operators and Basic Mining qualify for certificates of training received.

Additional Short Courses

Short courses ranging from one week to six weeks are provided in response to recognized need and/or requests from industries and organizations. Some of the courses offered in 1974 included Oil Burner Mechanics, Forest Fire Suppression, Logging and Diamond Drilling.

Project Work

Emphasis is placed on practical training and as a result, a three bedroom house was constructed in Whitehorse by the Building Construction class and wired by the Electrical class. The house will be sold by tender.

The reconstruction of the road to Takhini was completed and a new road built to the ski hill.

Apprenticeship and Tradesman Qualifications

There are 10 trades in the Yukon which are certifiable with either a Yukon Tradesmen's Qualification Certificate or an Interprovincial Red Seal endorsement.

In 1974-75 a total of 61 tradesmen wrote the examination for journeyman tradesman qualifications, 28 were successful and of the 28, two received the Interprovincial Red Seal.

There were five apprentices who completed their apprenticeship and received the Yukon Tradesmen's Qualification Certificate and the Interprovincial Red Seal. There are 50 apprentices currently under contract.

To the end of March 31, 1975, 326 Tradesmen's Qualification Certificates have been issued in the 10 trades and 17 people have completed their apprenticeship.

The interests and enrolment in night school varies considerably from year to year. In 1974-75 a total of 801 people enrolled in night school classes, a decrease of 163 from the previous year. Of the 801, 667 were in the Whitehorse area and 134 in the outlying areas. 198 were enrolled in vocational courses and 603 enrolled in the interest courses run by this Department.

Industrial Training

In 1974-75, seven supervisory and management courses were provided for 148 people representing every industry in the Yukon.

Rehabilitation Services

During this fiscal period, a total of 101 individuals were registered for Rehabilitation Services. 54.9 per cent were diagnosed as suffering from mental disabilities, 33.8 per cent were physically disabled, 2.9 per cent socially disabled and 8.9 per cent suffered from more than one diagnosed disability. A total of 265 assessments, either medical, psychological, psychiatric, academic, vocational and social, were performed on the 101 clients. 36.8 per cent of our clients were employed when their cases were closed, 21.9 per cent are still in training, 10.9 per cent are in medical facilities and 16.8 per cent are categorized as "whereabouts unknown". The balance of the cases are still under assessment or are awaiting assessments.

Recreation Branch

Review of 1974-75

Many of the proposed activities of the Recreation Branch had to be curtailed this year as for some six months the Branch was without a director. Nevertheless, many projects were successfully undertaken.

Primarily due to the efforts of the Yukon Sports Federation with support from the Superintendent of Education, a contingent of athletes was assembled in preparation for competition in the Canada Winter Games in February at Lethbridge, Alberta. Relatively speaking, the Yukon athletes fared well in their competitions. In measuring our efforts against the stated objectives of the Canada Games i.e., a sports development process; it is felt that the Yukon may be beginning to realize the value of such "Games". It may be of interest to note, the Yukon and NWT recreation personnel are currently lobbying, at the Council of Provincial Directors of Recreation level, for amendments to the games format. Our proposal is one that would allow each Territory to take to the games an extraordinary number of coaches who would be exposed to a series of coaches' clinics designed to meet our specific needs.

At present, the Recreation Branch is still operating a portable swim pool program in six Yukon communities: Watson Lake, Teslin, Carmacks, Mayo, Clinton Creek and Beaver Creek. In 1975-76 it is anticipated that another two pools will be placed in service at two other locations — as yet to be determined.

Interest Courses

In 1974-75 the City of Whitehorse Recreation Department, the YWCA and the Department of Education collaborated in developing interest courses for the community, determined which group would provide the course and then issued a brochure which advertised all community courses available. This was very successful and was received with many favourable comments from the community.

DEPARTMENT OF TOURISM, CONSERVATION AND INFORMATION SERVICES

Tourism and Information Branch

Responsibilities

The Branch is responsible for promoting travel to the Yukon Territory and encouraging the development of tourist

attractions and facilities within the Territory.

In addition, it is responsible for the government's public communications programming.

Review of 1974-75

In a year when many areas are recording substantial decreases in tourism, Yukon managed to post a modest increase in total visitor traffic. The total number of visitors increased 4.5 per cent over 1973 and spent an estimated \$26,161,000 in the Territory.

Significant changes were noted in 1974 modes of travel, particularly during the May-September period. The number of people travelling on highways in the summer period remained virtually the same from 1973, but of these, the number of people travelling by bus increased dramatically (up 83.2 per cent) to a total of 29,000. There were major increases in air travel and in other modes, mainly the White Pass and Yukon Railway. Canadian travellers continued to increase their share of visitor origins to 23.4 per cent of total traffic.

In addition to a tourism overview, the Branch carried out studies on highway lodges, parks for the Yukon Territory (proposed), Yukon Historic Sites Evaluation, and a Restoration/Preservation program for Fort Selkirk and Forty Mile.

Several writers, film crews and travel agents were hosted. The Branch introduced a hospitality training course called "Yukon Host" which was attended by 400 representatives of the hospitality industry in three communities.

Yukon House in Vancouver experienced significant increases in the number of inquiries processed respecting employment and business opportunities. This service provides Yukon information from its location at 567 Hornby Street in Vancouver, as well as engaging in a number of Yukon promotions and media liaison.

Visitor information centres were open throughout the summer at Watson Lake, Beaver Creek, Haines Junction and Dawson City in the Yukon and the Branch shared in the cost of operating the Chamber of Commerce Information Centre in Whitehorse.

Information Services expanded its services to all departments and is now providing complete public communications programming to user departments. The photo section had developed a considerably improved photo library and is continuing its efforts in maintaining this service.

Plans for 1975-76

To continue Territorial Parks system planning.

To carry out major visitor exist survey.

To follow up on recommendations of highway lodge study.

To revise and update tourism literature in French and English.

To emphasize tourism development in all regions of Yukon.

Continued development of photo and information sections.

Long-term Plans

Continued advertising and promotion to stimulate travel to the Yukon, programs designed to assist the development of the Territory's tourist facilities and services, such as territorial parks, expanding existing campgrounds and provision of adequate public communications.

DEPARTMENT OF TREASURY

Responsibilities

- Management of the Yukon Consolidated Revenue Fund.
- Collection of all taxes and revenues.
- Supervision, control and direction of all matters related to the financial affairs of the Territory.
- Data centre and systems development for all government departments.
- Central purchasing, central stores, traffic and distribution.
- Supervision of Small Business Loans Program.

Review of 1973-74

Operation and maintenance expenditure increased from \$27,319,614 for the previous fiscal year to \$33,587,909 in the fiscal year ended March 31, 1974. This increase is attributable to increased material and labour costs in all areas of operation.

Revenue, recoveries and the operating deficit grant related to operation and maintenance increased from \$30,333,609 for the period ending March 31, 1973 to \$34,944,388 for the current fiscal year. Increases arose principally from higher recoveries as a result of higher expenditure some increase in revenue due to volume an

an increase in the grant in lieu of taxes which forms a part of the deficit grant.

Capital and loan expenditures for the fiscal year ending March 31, 1974 were \$2,179,484 less than the previous year. The \$8,453,828 expended was financed through cost-sharing agreements, or by way of loans from the Federal Government.

Plans for 1975-76

New computer applications including the YHCIP are being studied. Centralized traffic functions will be adopted in the coming year. Changes in procedures are being explored and implemented to facilitate improvement in payment of accounts.

Long-term Plans

Continued improvement of financial management techniques and introduction of combined financial and operational management reporting.

Increased emphasis on data processing systems and adoption of additional applications.

Development of materials management concept in relation to acquisition and utilization of materials.

DEPARTMENT OF TERRITORIAL SECRETARY AND REGISTRAR GENERAL

Responsibilities

The Department is responsible for the following:

Registration Services

- Companies
- Motor Vehicles
- Securities
- Vital Statistics
- Business Licences
- Cooperative Associations
- Credit Unions
- Partnerships
- Document Registrations
- Motion Pictures
- Insurance
- Professional

Inspection Services

- Labour Standards
- Liquor
- Steam Boilers and Elevators
- Motor Vehicles
- Yukon Health Care Insurance Plan
- Consumers' Protection
- Fair Practices

- Motor Vehicles
 - Transport Public Utilities
 - Driving Program
 - Watson Lake, Haines Junction and Whitehorse Weighscales
- Workmen's Compensation
- Public Administrator
- Records Office
- Queen's Printer, Yukon
- Western Canada Lottery (Yukon Division)
- Employment Liaison
- Electrical Public Utilities Board

The primary operations are located at headquarters in Whitehorse, with agents located at Watson Lake, Haines Junction, Mayo, Dawson and weighscale operators at Watson Lake, Whitehorse and Haines Junction on the Alaska Highway.

Review of 1974-75

Registration Services

Under the Business Licence Ordinance, a total of 450 licences were issued, 165 of these by the Yukon Territorial Agents.

Under the Insurance Licence Ordinance, 30 salesmen's licences were issued and 14 salaried officials were licensed.

Under the Securities Ordinance 15 prospectuses were filed and two amendments to a prospectus were filed. One brokers licence, ten salesmen licences and two security issuers' licences were granted.

Under the Societies Ordinance, 16 societies were incorporated, and 35 financial statements were registered.

Under the Motion Pictures Ordinance, one exhibitor and one operator were licensed.

Under the Companies Ordinance, 65 companies became new Yukon corporations, 93 were licensed extra-territorially, a total of 158 new companies.

Under the Vital Statistics Ordinance, 460 birth certificates and 122 death certificates were issued, and 190 marriages were recorded by the Registrar. Also indexed with Statistics Canada were 10 stillbirths, 37 adoptions, 13 legitimizations, 14 name changes, 15 delayed registrations of birth, and 1 delayed registration of marriage.

Under the Bills of Sale Ordinance, Conditional Sale Ordinance, Assignment of Book Debts Ordinance and Garagemen's Lien Ordinance, 4,361 documents were registered.

Under the Partnership Ordinance, 10 partnerships were registered.

Recorded in the Professional Register were licences issued to two chiropractors, six dentists, eight dental therapists, 33 doctors, 87 lawyers, four optometrists, and eight pharmacists.

Inspection Services

Four hundred and sixty-two liquor inspections were completed during the year with follow-up correspondence in each case. Seven liquor licences were suspended and three prosecutions entered under the Liquor Ordinance.

Two hundred and nineteen inspections were conducted under the provisions of the Labour Standards Ordinance, and 237 wage complaints were received and investigated. Enforcement of the Labour Standards Ordinance resulted in the collection of outstanding wage entitlements in the amount of \$42,940.95. Fifty-four charges were laid in respect of offences under the Ordinance (39 of them involved a single company).

One hundred ninety-three matters were investigated for Workmen's Compensation Office and a total of \$3,431.41 collected on its behalf. One hundred sixty-five inspections were conducted pursuant to the Accident Prevention Regulations.

Forty-six matters were investigated pursuant to the Motor Vehicles Ordinance.

Twenty-nine matters were investigated in connection with the Business Licence Ordinance and three in respect of the Companies Ordinance.

Twenty inspections were conducted pursuant to the Elevator and Fixed Conveyances Ordinance.

A total of \$16,244.92 was collected under the provisions of the Yukon Health Care Insurance Plan Ordinance and 215 inspections were conducted. Seven charges were laid under this Ordinance.

Workmen's Compensation

During the calendar year 1974, 931 employers registered with the Workmen's Compensation Office.

There were 1,651 accidents reported and three fatal accidents. Fifty-two claims were referred to the referee, six appeals were also referred to the referee, and two permanent disability awards were approved. Five claimants were referred for rehabilitation services.

Public Administrator

The Public Administrator commenced the calendar year with 108 current files to which were added 58 files consisting of 55 deceased estates, one minor and two missing persons. During the year files were closed in relation to 77 deceased estates, one patient and five missing persons, leaving a total of 83 current files being maintained on December 31, 1974.

Motor Vehicles

Under the Motor Vehicles Ordinance 24,302 licences, certificates and registrations were issued.

Weighscales at Watson Lake, Whitehorse and Haines Junction operated on a 24-hour basis. Each weighscale employed one supervisor, three operators and one permanent part-time operator. All vehicles of 20,000 lb. or more gross vehicle weight are checked for legal weight, proper licensing and adherence to requirements under the fuel tax ordinance. Where necessary licence plates or permits are issued. Further where the vehicle is oversize or overweight a permit or penalty fee is assessed according to circumstances.

Fuel emblems or one trip fuel permits are sold where applicable.

Eighty-eight thousand, four hundred and forty-seven vehicles were checked and recorded through the weighscales.

Total revenue from all sources including fuel tax was \$2,914,500.15.

Records Office

The Records Office and its two sub-stations opened 438 new files and handled 539,558 pieces of mail. Twenty-nine thousand and forty-six files were routed to department. Five hundred and fifty-one cubic feet of closed records were transferred to Records Centre. Twenty-seven cubic feet were transferred to the Archives. Two hundred and eighty-nine cubic feet of records were destroyed.

A Block Numeric File Classification System is being introduced throughout the Territorial Government to improve filing efficiency, retrieval of records and have all departments and branches on one filing system with centralized control.

Queen's Printer

The Territorial Secretary provides various printing equipment making it possible to handle the volume of printing required by the Government. The Queen's Printer is responsible for the printing of all ordinances, amendments to the Ordinances of the

Yukon Territory, the printing of regulations, votes and proceedings of the Council Sessions and is responsible for approving all publications of Gazette Notices as required by certain ordinances of the Yukon.

Western Canada Lottery

On May 13, 1974, final assent was given to the Lotteries Ordinance, under authority of which the Yukon entered into an agreement with the Western Canada Lottery Foundation and the four Western Provinces.

The Yukon administration of the Western Canada Lottery is centred in Whitehorse, including marketing, advertising, distribution of tickets and coupon sales.

In the first AA Series, ticket sales were 11,500. Non-profit agencies earned \$9,810.59 and the Yukon Territorial Government earned \$9,529.41. The AB Series brought sales of only 8,200 tickets, but there were fewer agencies. Profits were divided as \$7,044.18 to agencies and \$5,258.82 to the Yukon Territorial Government. The AC (Third) Series is not yet concluded, but indications show a ticket return of about \$10,000.

Plans for 1975-76 include expansion of the Western Canada Lottery by adopting a weekly lottery to coincide with the present quarterly draw.

Employment Liaison

The Employment Liaison Officer was transferred to this Department effective December, 1974.

The responsibilities of this position include liaison with companies and industries operating in the Yukon Territory in order to promote employment of Yukon residents, as well as determination of appropriate training programs to enable Yukon residents to qualify for employment.

Electrical Public Utilities Board

The Electrical Public Utilities Board has authority to approve rates and franchises with respect to public utilities operating in the Yukon Territory.

DEPARTMENT OF HEALTH, WELFARE AND REHABILITATION

Corrections Branch

Responsibilities

The Corrections Branch of the Department of Health, Welfare and Rehabilitation of the Yukon Territorial Government has

the overall responsibility for providing adult and juvenile probation services, the operation of a medium security institution and the operation of a juvenile training home.

Review of 1974-75

The number of persons admitted to institutional care, both adults and juveniles, showed a marked decrease in comparison to the 1973-74 fiscal year. Figures in parentheses represent 1973-74 statistics.

Medium Institution Admissions:

| | |
|----------------|-----------|
| Male | 222 (264) |
| Female | 16 (27) |
| Male Remands | 105 (144) |
| Female Remands | 6 (6) |
| | 349 (441) |

Yukon Juvenile Training Home:

| | |
|-------|---------|
| Boys | 27 (72) |
| Girls | 14 (7) |
| | 41 (79) |

| | |
|---------------------------------|-----------|
| Total institutional admissions: | 390 (520) |
|---------------------------------|-----------|

— a decrease of 130.

The decrease in admissions is in part attributable to the increased use of probation services by the Territorial Courts. During the period under review the probation caseload continued to climb and in October, 1974 an all time record of 398 cases was recorded. The majority of the increase was in the adult caseload, the juvenile caseload remaining fairly static at 45 probationers, however there was increased contact with juveniles not directly placed on probation but in many cases exhibiting behaviour bordering on delinquency and who as a result were referred to this agency.

Plans for 1975-76

Upon completion of the new juvenile training home, which it is anticipated will be ready for occupation in June of 1975, the present classification and staging system will be reorganized. The extra facilities and the floor space over and above what the present trailer complex affords will enable greater flexibility of that system and of course of indoor programs.

In the adult setting, females now accommodated at the medium institution will, upon completion of the training home

complex, be housed in a separate section there. The area at the adult institution which now houses adult females will become male dormitories and allow for the creation of a young offenders' wing.

In the probation services the emphasis will be to provide increased supervision to probationers in communities where there is no resident probation officer.

Long-term Plans

To provide adequate probation services in the outlying communities by the gradual establishing of field offices and acquiring suitable qualified staff to man same.

To provide for training of branch personnel to enhance promotional opportunities for transfers within the Branch and thus increase their worth and usefulness.

Health Services Branch

Responsibilities

The Health Services Branch administers the delivery of those programs which by statutory authority provide health services to residents of the Territory. These programs naturally divide themselves into three broad groups these being:

General Health Services

A diversity of programs directed mainly towards the preventive aspects of health care. They include disease control, mental health, inspection services, public health, health education, school dental, travel for medical and alcohol drug abuse therapy. In some of these programs the expertise and assistance of Medical Services Branch, Health & Welfare Canada is an essential part of their content and in such cases a joint venture operation occurs.

Yukon Health Care Insurance Plan

More commonly known as "Medicare" the plan provides residents with insured medical services without geographic restriction. The plan conforms with the Medical Care Act (Canada) and is cost shared by the Federal Government under that legislation. Premium contributions by residents provide Yukon Territorial Government shared program cost.

Yukon Hospital Insurance Services (H.I.S.)

The plan provides in-patient and out-patient care for residents and as with health care insurance is not subject to geographic restrictions. This plan also conforms to the

federal statute — Hospital Insurance & Diagnostic Services Act (Canada) — and is cost shared by the Federal Government under the terms of that legislation. Yukon Territorial Government funding is provided from general revenue.

Long-term Plans

The Yukon Region, Medical Services Branch, Health & Welfare Canada is aiding in the development of local expertise in the operation of health programs. It also works with Yukon Territorial Government in the development of a transfer schedule which will give the Yukon full responsibility for all aspects of health care.

Work will be continued towards the change to budget review operations of federal hospitals in the Territory. The

Federal Government has for some time expressed dissatisfaction with cost sharing arrangements of the health insurance programs, particularly that of hospital insurance, and is engaged in the development of new cost sharing proposals. Until the outcome of these proposals and their impact on the two plans is known there will be no changes in either the hospital insurance or health care insurance plans.

Review of 1974-75

With the exception of Y.H.I.S. out-patient services, increase in the utilization of services was consistent with population growth. Increases in daily rates in hospitals outside the Yukon and increases in transportation costs both occurred and affected

Yukon Hospital Insurance Services

| Services | Increase (Decrease) | | |
|-------------------------------|------------------------|--------------------|------------------|
| | 1974 | 1973 | |
| In-Patients | | | |
| Patient days | 28,098 | 27,250 | 848 |
| Separations | 4,266 | 4,157 | 109 |
| Average length of stay (days) | 6.5 | 6.6 | (.1) |
| Newborn | | | |
| Patient days | 2,418 | 2,368 | 50 |
| Separations | 478 | 388 | 90 |
| Average length of stay (days) | 5.1 | 6.1 | (1) |
| Out-Patients | | | |
| Diagnostic | 10,646 | 7,615 | 3,031 |
| Accident | 2,960 | 3,176 | (216) |
| Accident third party | 52 | 54 | (2) |
| Total | 13,658 | 10,845 | 2,813 |
| Costs | | | |
| In-patient services | \$1,826,259 | \$1,712,563 | \$113,696 |
| Out-patient services | 176,259 | 141,926 | 34,333 |
| Administration | 58,533 | 49,553 | 8,980 |
| Third party recoveries | (9,081) | (5,251) | (3,830) |
| Total | \$2,051,970 | \$1,898,791 | \$153,179 |
| Per capita cost | \$97.71 | \$94.94 | \$2.77 |

Yukon Health Care Insurance Plan

| Costs | | | |
|----------------------------|--------------------|--------------------|------------------|
| Insured Services | | | |
| Payments to practitioners | \$1,333,565 | \$1,126,439 | \$207,126 |
| Reimbursement of residents | 7,881 | 8,662 | (781) |
| Payments to dentists | 11,810 | 9,412 | 2,398 |
| Total | \$1,353,256 | \$1,144,513 | \$208,743 |
| Administration | 90,671 | 81,254 | 9,417 |
| Total costs | \$1,443,927 | \$1,225,767 | \$218,160 |
| Per capita cost | \$68.76 | \$61.29 | \$7.47 |

Y.H.I.S. and the travel for medical treatment program respectively.

Social Welfare Branch

Responsibilities

The Social Assistance Ordinance and the Child Welfare Ordinance are the authority (statutory basis) for the provision of a comprehensive and diversified range of social services, programs and activities conducted by the Social Welfare Branch of the Department of Health, Welfare and Rehabilitation. These include social allowance, including the Territorial Supplementary Allowance, services for the elderly, family service, child care and protection of children, services to unmarried parents, and the operation of various geriatric and child care facilities. The Branch also provides funds for grants to community-based social service agencies. The full range of services is available to all residents of the Yukon, with the exception of social assistance to persons of Indian status, which continued to be administered by the Indian Affairs Branch of the Federal Department of Indian Affairs and Northern Development.

Organization

The Branch is organized into five divisions. Special Placements is responsible for adoptions, foster homes, group homes, and placement of children in various specialized resources both within and outside the Yukon. The Metropolitan Services and the Field Services Divisions (within and outside Whitehorse respectively) provide all other welfare services in their respective geographical areas. One social worker specializing in geriatric casework is included in the Metro Division.

Homes & Institutions is responsible for the operation of the geriatric facilities, and oversees some of the physical aspects of operating child care facilities, offices, vehicles, and emergency welfare services. The Administrative Services Division provides financial, statistical and general administrative support services for all Branch operations.

The Head Office of the Branch is located in Whitehorse. Field offices located in Dawson City, Mayo, Ross River and Watson Lake, together with two highway workers operating from Head Office, provide coverage for all the populated areas of the Territory.

Total staff complement is 71 (68-1/2 man-years), which includes institutional employees, but does not include house-parents of the child care facilities who operate under contract on a fee basis.

Facilities

As supportive resources essential to the successful functioning of welfare programs, the Branch owns and operates a variety of homes and institutions for children in care and for senior citizens. The operation of these facilities is cost-shared by the Federal Government under provisions of the Canada Assistance Plan.

The geriatric facilities consist of a combined nursing home and senior citizens' home in Dawson City, a senior citizens' home with integral nursing care wing in the Riverdale subdivision of Whitehorse, and a senior citizens' home of bachelor-style apartment units in downtown Whitehorse. These three facilities provide a combination of residential accommodation (36 beds), domiciliary care (26 beds), and personal nursing care (24 beds), for a total capacity of 86 senior citizens.

The Branch also administers 12 beds reserved in the Whitehorse General Hospital which is owned and operated by Northern Health Services of Health and Welfare Canada. These beds have been designated as "special care" or "extended care" beds for those who require nursing care beyond the capacity and capabilities of the welfare institutions, but who do not require acute or convalescent care and are therefore ineligible for Hospital Insurance Services.

Eight child care facilities operated by the Branch, with a capacity for 71 children, include three group homes in Whitehorse, a Receiving Home and Assessment Centre for the assessment as well as short-term and emergency placement of children apprehended or otherwise taken into care, and a Group Home for younger children suffering from mental or multiple mental and physical handicaps. There is a Group/Receiving Home in each of the three communities of Dawson City, Mayo and Watson Lake. The Branch also contracts the services of one additional group home in Whitehorse, owned and operated by the Sisters of Providence, with a capacity for an additional twelve children.

Review of 1974-75

The various programs and services of the Social Welfare Branch are designed to provide care and assistance to the elderly, to

alleviate poverty and distress among families and individuals, to provide protection and care for children endangered by abuse or neglect, and to contribute towards the social and economic well-being of all people of the Yukon by recognizing and promoting the family and the community as the nucleus of our social structure, values and life style.

The past year has not seen any major expansion or addition to these programs, nor is any contemplated during the coming year. Changes have occurred which are attributable both to external influences as well as to internal changes in the conduct and improvement of our program activities.

An intensive and improved level of case-work activity involving more concentrated planning and supervision of children taken into care has resulted in reduced admissions and reduced utilization of the group homes. Coupled with this effort there has been a continuing campaign to locate appropriate foster homes for children, thereby facilitating selective placement of children for adoption or more appropriate long-term care.

It is becoming more glaringly apparent that our programs are not adequate to meet the demands for adolescence and that a specialized facility other than a group home is required. With the completion of the new Juvenile Training Home at Wolf Creek and with mutual cooperation and planning present program difficulties respecting adolescents will result.

Almost since the day it opened, Macaula Lodge has been required to provide an ever-increasing degree of nursing and personal care to some of the residents because of their advancing age and deteriorating condition. Consequently, in the spring of 1974, one wing was renovated to improve the physical facilities for those requiring continual care and supervision. This limited care nursing wing was opened in June 1974, with nine beds and a slight increase in staff. Because of the anticipated continuing demand for accommodation, it was necessary to replace those beds displaced by the nursing wing, and at the same time, to alleviate the inflexibility imposed by the fact that all units in the lodge were designed for shared accommodation. In June 1974, construction began on a small additional two-storey wing on the east end of the building, providing another eight units, all single occupancy. Unfortunately, the contractor experienced difficulties with this project and the new wing did not open until early into the present fiscal year (May 1, 1975). With

the opening of this new wing, Macaulay Lodge has a maximum capacity of 51 beds and a staff complement of 20 (18-1/2 man-years).

Elevator — Macaulay Lodge

In late November 1972, the Executive Committee gave approval to proceed with purchase and installation of the elevator, at an estimated expenditure of \$25,000. The cost increased because of the need to change from hydraulic to electric operation, and the project was delayed by labour disputes and delayed shipment of parts from the U.S. The elevator was finally installed in December and January, and put into operation on February 19, 1975. The elevator will permit increased occupancy and greater flexibility of placement by making the second floor and the basement recreation room accessible to senior citizens who are unable to climb stairs.

Staff Development

In keeping with the overall objectives of the Branch, the Staff Development Program continued through the provision of seminars and workshops designed to improve expertise both in practice and procedures.

Long-term Plans

The Branch has continued to expand. Its planning will continue to be directed toward the development of sound social policies and positive programs. Development of services and the necessary supportive resources will continue in the light of existing needs and changing social and economic conditions.

There was a total caseload increase in 1974-75 by 388 cases or 14.1 per cent over the previous Year (1973-74). The total expenditure, however, only increased by 7.9 per cent, reflecting a reduction of per case cost of

\$42.00 or 5.5 per cent. The recipient cost remained the same.

A continued reduction of children admitted to the care of the Director of Child Welfare is reflected. The increase in the adoption caseload merely reflects an additional category. An increase of 8.7 per cent in Family Service is related to the decrease in the child-in-care caseload. A significant increase (28.8 per cent) in the Social Assistance category reflects both increases in the cost of living and the general slow down of the economy.

ALCOHOL & DRUG SERVICES

Responsibilities

Alcohol & Drug Services is responsible for the development and management of

TABLE A: TOTAL EXPENDITURES 1974/75 — 1973/74
COMPARATIVE EXPENDITURE DATA

| Fiscal Year | Total Expenditure | Total Case-load | Total Recipients | Per Case Cost | Per Recipient Cost | Per Capita Cost | Cases per 1,000 population |
|--------------------------------|--------------------------|-----------------------|----------------------|-------------------------|--------------------|-----------------------|----------------------------|
| 1973/74 | \$2,107,825 | 2,749 | 5,659 | \$767 | \$372 | \$105.39 | 137 |
| 1974/75 | \$2,275,037 | 3,137 | 6,096 | 725 | 373 | 108.34 | 149 |
| Increase or (decrease) 1973/74 | 167,212 or 7.9% increase | 388 or 14.1% increase | 437 or 7.7% increase | (42) (or 5.5% decrease) | 1 incr. | 2.95 or 2.8% increase | 12 or 8.8% increase |

TABLE B: CASELOAD ACTIVITIES 1974-75

| Category of Service | Cases as of Apr. 1, 1974 | Cases Opened to Mar. 31, 1975 | Total Case-load Carried | No. of individuals involved | Cases Closed | Total Case-load 1973/74 | Percentage Caseload Increase (Decrease) |
|------------------------------------|--------------------------|-------------------------------|-------------------------|-----------------------------|--------------|-------------------------|---|
| Children in care | 273 | 148 | 421 | 421 | 165 | 478 | (12.0) |
| Child protection | 124 | 38 | 162 | 786 | 68 | 177 | (8.5) |
| Foster homes approved | 83 | 26 | 109 | 218 | 21 | 115 | (5.2) |
| Adoption services | 76 | 48 | 124 | 332 | 60 | 85 | 45.9 |
| Unmarried parents | 13 | 10 | 23 | 28 | 15 | 38 | (39.5) |
| Family service | 145 | 206 | 351 | 1,261 | 168 | 323 | 8.7 |
| Public assistance | | | | | | | |
| Social assistance | 404 | 1,450 | 1,854 | 2,957 | 1,454 | 1,439 | 28.8 |
| Blind & disabled persons allowance | 6 | — | 6 | 6 | 6 | 13 | (54) |
| Geriatric care | | | | | | | |
| Nursing & senior citizens homes | 59 | 28 | 87 | 87 | 12 | 81 | 7.4 |
| TOTAL | 1,183 | 1,954 | 3,137 | 6,096 | 1,969 | 2,749 | 14.1 |

programs to combat alcohol and drug problems in the Yukon Territory.

Review of 1974-75

In July, 1974, Alcohol & Drug Services was fully reactivated. At that time, a supervisor was hired to direct the program as well as a full-time clerical person. Previously, the program had been operating with only one treatment counsellor.

During the first eight months Alcohol & Drug Services has been in full operation, several new programs have been developed. The first project was the publication of a monthly journal, "Connection", which has a circulation of 300. Other major projects included the development and implementation of an Employee Alcoholism Policy and Program for the Yukon Territorial Government, and the co-ordination of the Federal Employee Alcoholism Program. Training programs and workshops were a major thrust of the Department as well. Such programs included a Workshop for community Health Workers and Band Welfare Workers, a two-day seminar for native leaders, and monthly educational sessions at the Whitehorse Correctional Institute. Personnel from Alcohol & Drug Services also cooperated with other Territorial and Federal Government departments in an impaired drivers' re-education program, and a public information program on drinking and driving. In addition, many consultations were carried out with private and government social agencies. During this period, the treatment counsellor has continued to devote 50 per cent of her time to direct treatment of persons with alcohol and drug problems. A detoxication program for chronic and public inebriates was also developed and has been approved for implementation in the coming year.

The above description is only a sampling of the varied programs and projects undertaken by Alcohol & Drug Services, but it does describe the major areas of concern in 1974-75.

Plans for 1975-76

Several projects and programs have been planned for 1975-76 which include:

- the implementation of the detoxication program;
- the completion of a situational analysis of alcohol problems in the Yukon Territory;
- an agreement with Skookum Jim Memorial Hall Friendship Centre has been

reached to undertake the training of a native alcoholism counsellor;

- the development of a training cycle for social and health workers, on alcohol problems.

When the situational analysis is completed in 1975, it is foreseen that a comprehensive prevention program will be developed. The prevention program, based on the situational analysis will determine the short- and long-term thrust of Alcohol & Drug Services.

DEPARTMENT OF LOCAL GOVERNMENT

Responsibilities

- To provide municipal services for all unorganized communities in the Territory.
- To assist in the establishment and operation of municipal services in Local Improvement Districts.
- To maintain an advisory service and inspect municipalities to ensure compliance with ordinances pertaining to municipalities.
- To develop policies so that municipalities of various sizes can provide economical services to their taxpayers.

Review of 1974-75

A community plan and related zoning regulations were prepared for the Community of Ross River which will guide its future development.

A piped water system was installed in the community of Haines Junction.

Assent has been given to a Community Assistance Ordinance which provides a cost-sharing scheme for major capital projects in all Yukon Communities.

The City of Dawson completed a development plan in consultation with the National Historic Sites Branch who are in the midst of a major restoration program.

Plans for 1975-76

A territorial administration complex will be constructed in Mayo and Haines Junction which will accommodate among many uses, the needs of the Local Improvement District.

The Community of Ross River will obtain the status of a Local Improvement District.

It is considered that necessary legislation will be implemented which will introduce an employee retirement pension plan for municipal officers.

To establish close liaison with native agencies to promote the joint-use concept of municipal services.

To introduce and provide training to municipal officers for more advanced accounting procedures.

To review the status of local improvement districts and develop this type of self-government in a number of existing unorganized communities.

To review the municipal services provided to each community to ensure that the most economical methods are being followed, and that residents have adequate services.

To upgrade operational and maintenance procedures for utility services and provide trained utility operators to communities where new plant and services are being installed.

Long-term Plans

To provide and continually update municipal procedure manuals for the guidance of officers in small communities.

To implement and upgrade general plans, and zoning regulations in all municipalities and unorganized communities, to ensure that development takes place in an orderly manner.

To promote local self-government establishment, giving local people the authority and responsibility to deal with local matters.

To improve the quality of life enjoyed by residents of Yukon communities through orderly installation of urban facilities and utilities to each community where economically justifiable.

Protective Services Branch

Responsibilities

- To implement and administer an effective fire prevention program to reduce loss of life and damage to property.
- To review building plans and specifications for conformity with Territorial and National Building and Electrical Standards.
- To maintain ongoing programs for the improvement of fire prevention, building plumbing and electrical standards within buildings.

- To disseminate information to the general public and industry for reducing domestic and industrial fires.
- To administer ambulance services in the communities of Dawson, Faro, Carmacks, Watson Lake and Whitehorse.

Review of 1974-75

One hundred and seven fires were reported in 1974, an increase of 27 compared with the 1973 total of 80.

Fire losses in 1974 amounted to \$636,286, an increase of \$118,329 as compared with the 1973 loss of \$517,957. Of the total 1974 loss \$439,346 or 69 per cent was covered by insurance.

Six fatalities and two injuries resulting from fires were recorded in 1974.

Five large loss fires (over \$50,000) occurred in 1974, destroying a vehicle, garage-restaurant and asphalt mixing plant on the Alaska Highway, a bunkhouse complex in Clinton Creek, and a warehouse-garage in the Whitehorse Industrial Area, total loss \$348,208.

Faro Volunteer Fire Department is to be commended on obtaining second place in Group F in the 1974 National Fire Prevention Competition. The award is in recognition of all-round efficiency in fire prevention.

Seven hundred and thirty-five electrical permits were issued in 1974, for a total of 8,929.56 in fees, \$6,316.70 residential, and 2,612.86 commercial.

One hundred and fifty-nine building permits were issued for a total construction value of \$2,759,205, and fees collected were \$5,103.75.

Total ambulance runs for 1974 were: Carmacks 26; Dawson City 52; Faro 28; Whitehorse 657; Watson Lake 41. Watson Lake has been operating only since June, 1974.

Plans for 1975-76

Increased emphasis will be placed on the inspection procedures with particular reference to places of public assembly.

With the provision of water mains in many of the communities, fire department activities will now include training with, and the maintenance of hydrant systems so as to provide for a more effective and efficient response.

The ambulance service will continue to be upgraded with an additional unit being located in the Community of Mayo.

Assessment Branch

Responsibilities

- The Government of the Yukon Territory is responsible for all of the real property assessment in the Yukon Territory.
- Preparation of assessment rolls for the Municipalities and the Yukon Territorial Government.
- Render assistance to the Territorial Tax Collector.
- Participate in Court of Revision and appeal hearings.
- Real Property appraisals.

Review of 1974-75

Assessment figures for 1975 and corresponding 1974 figures; the following is a summary of total assessed values:

| | 1975 | 1974 |
|--------------------|------------|------------|
| City of Whitehorse | 69,747,760 | 67,000,000 |
| Dawson City | 2,679,400 | 2,350,000 |
| Town of Faro | 6,232,160 | 5,650,000 |
| All other areas | 32,854,080 | 28,250,000 |

Plans for 1975-76

General re-assessments in the City of Whitehorse

Annual assessments of all municipalities and communities

Assessment review of mines in the Territory

Review assessment equalization

Review mobile-home procedure

Community Planning and Land Disposal Services

Responsibilities

- The planning of Yukon communities and Regional Land Disposal areas to permit orderly economic development.
- The sale, lease or other disposition of lands under the administration, control and management of the Commissioner of the Yukon Territory.
- The development of serviced land to fulfil the needs of Yukon communities.

Review of 1974-75

A consulting firm was hired to study and assemble a comprehensive Agricultural Policy for consideration by the Territorial Legislative Assembly. This was completed and tabled with the Legislative Assembly in March of 1975.

Residential land development projects were completed or are in the final stages of development for: Whitehorse — Riverdale 96, Hillcrest 36, Watson Lake, 84, Haines Junction 54, and Carmacks 39.

A Land Use Planner has been appointed. The first Regional Land Use Plan was prepared by consultants for the Yukon Kluane Region and centred on the road corridors adjacent to the new Kluane National Park. The proposals were submitted for public comment in the communities within the Region. A great deal of interest was shown and the plan is now being reviewed to include information gathered at the public meetings.

Land transactions in the amount of \$316,787 occurred during 1974-75, and included the sale of 132 lots in Whitehorse, and 66 lots in outlying community subdivisions.

Plans for 1975-76

Land Use Policies are being developed for Legislative Assembly consideration and adoption and will include adoption of an Agricultural Policy for the Yukon.

Land developments for 1975-76 will include the following Whitehorse Projects Porter Creek — 41 trailer residential lots, 60 single-family residential; Riverdale — 167 single family residential, 11 acres multiple residential development for 137 units of housing, elementary school site and fire hall site. Four hundred and five residential units could be developed on the lands serviced in the 1975-76 Program.

Planning is proceeding for the further development of building lots to meet the City of Whitehorse needs beyond 1976.

Regional planning will also be continued.

Long-term Plans

To prepare regional and community plans and zoning control legislation for every Yukon community and regional area to ensure orderly land use.

To establish a land disposal policy and to administer the disposition of land to permit the orderly, efficient and economic development of all areas in the Yukon.

Game Branch

Responsibilities

This Branch is responsible for the administration and enforcement of the Game Ordinance, Fur Export Tax Ordinance, Brands Ordinance, Pounds Ordinance, Migratory Birds Convention Act, Canada Wildlife Act, International Agreement on the Conservation of Polar Bears, Game Export Act and the Freshwater Fishery Regulations, as well as for conducting programs that are necessary for proper wildlife resource management.

Review of 1974-75

New game guardians were hired for the Mayo and Faro districts, but the proposed hiring of a man for Old Crow was temporarily postponed. Game inventory work was continued and covered the Ruby, Nisling, and Dawson Ranges. Routine annual surveys were also carried out to assess the status of the remnant goat population in south-central Yukon, to keep track of an introduced elk herd, and to monitor the moose population in the Tarfu-Snafu Lakes area, as special study area of the Game Branch. Hunters check stations were maintained during the antlerless moose season and during the Porcupine Caribou herd harvest along the Dempster Highway.

The trophies of all sheep, goat, and grizzlies shot in the Yukon during the 1974-75 season were measured by biologists to monitor the trend of these populations in various areas of the Yukon. Detailed questionnaires were sent to all hunters in order to establish realistic harvest statistics. Several reports and technical publications were released by Game Branch technical staff. The harvest of big game during 1974-75 was comparable to that of 1973-74, with dall sheep being slightly higher and grizzlies and black bear lower than in 1973-74. There was a drop in the trapping activity because of very mild weather in the early part of the winter which did not allow trappers to visit their lines.

Plans for 1975-76

Because of budget restrictions no new detachments will be opened this year. The northern Yukon will again be serviced on a temporary basis for three months during the summer out of Old Crow. Biological work will be initiated on the Old Crow Flats waterfowl.

Game inventories will continue in the southern Yukon and it is hoped that the

Logan Mountains in the southeastern Yukon will be completed. This area is occupied by the Yukon's only significant goat populations.

A hunters' training program will be given during April and May and well over 100 people have registered.

Three new positions will be established during this fiscal year, one of them through re-classification. These will be a regulations officer, who will be in charge of enforcement activities; and two biologists, one for game management and one for furbearer and trapline management.

Long-term Plans

Game surveys will continue until a complete inventory of the Yukon's wildlife resource has been made. Stricter hunting regulations can be anticipated in certain areas of the southern Yukon where intensive hunting pressure has depleted certain game populations, after the proposed establishment of game management zones has been brought about. More emphasis will be placed on public education programs, and regular training courses will be held for students, hunters and trappers. For this reason the Game Branch is planning to take on a full-time education and public relations officer. It is hoped that close cooperation can be achieved with the Federal Government in the establishment of "special use areas" for wildlife. Such areas consist of critical winter ranges of waterfowl staging areas which are extremely important to the conservation of Yukon's wildlife, and on which wildlife considerations must be given priority over other types of land use.

Library Services Branch

Responsibilities

To provide library services to the public and to schools throughout the Yukon, and to provide archival services under the authority of the Archives Ordinance.

Review of 1974-75

With a stock of approximately 90,000 catalogued books the Library Services Branch served 67 outlets in various Yukon communities. On a rotating basis 36,333 books were shipped to these communities. The cataloguing and processing of 26,927 items of library materials (new books, added copies, paperbacks and audio-visual materials) were completed. The members of the Whitehorse Public Library borrowed

74,199 books during the year. The film library distributed 11,179 films throughout the Territory which were viewed by a total of 276,000 persons. The Yukon Archives dealt with 3,236 research inquiries.

The Art Gallery of the Whitehorse Public Library held major exhibitions of Yukon and Western Canadian Artists. Public Library activities included: a civil liberties workshop in cooperation with Territorial and Municipal agencies in disseminating information on several topics of citizen concern; book displays in support of community organization's programs; a children's story hour program on Whitehorse TV; and the initiation of paperback book shipments to Indian Band Council Offices and Adult Education Classrooms. A major step towards standardization of community library services was the drafting and implementation of an operating Policy Manual for Branch Libraries.

Public programming for the Yukon Archives included: a five part audio-visual lecture series on Yukon History; a summer photo-history display on sternwheeler; and the circulation through Fairbanks, Anchorage, Juneau, Seattle, Victoria, and Edmonton of a photo-history display entitled "The Last Great Gold Rush". Major Archives acquisitions were the North-West Highway Command records of construction of the Alaska Highway, and a significant proportion of the corporate records of the White Pass and Yukon Route.

Library Services was partially instrumental in attracting a Canada Council Explorations Grant for a local society to equip a multi-media productions centre. This centre is operating in borrowed space in Whitehorse Library Services facilities.

Long-term Plans

To work towards providing public and school library service at the level of accepted standards of library service. To cooperate, through the agency of the Yukon Archives, in the development of a Territorial Government System of records management for current, non-current, and permanent government records; and to acquire and maintain collection of the history of the Yukon as recorded in non-governmental sources.

Budget limitations are causing a more strict rationalization of activities in terms of defined objectives. In general the objectives are to alter and increase utilization of the library system and archives facilities in terms of specific community needs; and to strengthen the already integrated system of services by emphasizing such roles for all

types of services outlets as community information centres, community cultural centres, community research and learning centres, and community communications centres.

DEPARTMENT OF LEGAL AFFAIRS

Responsibilities

The Department is responsible for the administration of Justice throughout the Territory.

The Territorial Court system includes the Yukon Court of Appeal, the Supreme Court and Magistrate's Court located in Whitehorse; and Justices of the Peace Courts located at most of the outlying communities. The Magistrate's Court travels on circuit as required. Small Debt officials are located in Whitehorse, Dawson City and Watson Lake having jurisdiction up to \$500. Juvenile offenders are dealt with pursuant to the Juvenile Delinquents Act of Canada. The Deferal Department of Justice maintains a Crown Prosecutor's Office in Whitehorse for prosecution of Criminal Code and Federal offences.

The Department supervises the drafting of legal documents, ordinances and regulations and provides legal services to the Commissioner, Executive Committee, Legislative Assembly and individual departments of the Government of the Territory.

Review of 1974-75

The Yukon Court of Appeal sat in Whitehorse in June for the first time. Previously, sittings were conducted in Vancouver, B.C.. The Community Legal Education Program was instituted during the year in conjunction with circuit court visits to outlying locations. Legislation was passed establishing a Court Worker Program and to compensate victims of crime.

One hundred and eighty-six persons were granted criminal Legal Aid during the year and the fees paid to Legal Aid Counsel were brought into line with those paid in the province of Alberta.

The annual Justice of the Peace Conference was attended by community outreach workers and the Court Worker as part of a continuing upgrading policy.

Plans for 1975-76

The introduction of a comprehensive Legal Aid Plan to include civil legal aid and review of the small claims procedure including vehicle liability.

Long-term Plans

The establishment of an additional fully staffed Magistrate's Court.

DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS

Responsibilities

- To maintain and improve all highways and roads within the Yukon Territory with the exception of municipal roads to established standards, to co-ordinate federally financed or cost shared road maintenance and reconstruction programs with the appropriate branches of the Department of Indian and Northern Affairs under the Federal-Territorial Engineering Services Agreement. Also to co-ordinate with the Federal Department of Public Works matters pertaining to the maintenance of the Yukon Section of the Alaska Highway and the Yukon and B.C. Sections of the Haines Road falling under the Alaska Highway Maintenance Agreements between DPW and the Commissioner.
- To maintain and improve all buildings owned by the Territorial Government and to design or have designed all new buildings for the Territory.
- To plan, design and implement construction of water and sewer and sewage treatment facilities for Yukon communities—excluding municipalities—in consultation with the Territorial Department of Local Government. When required to assist municipalities in their capital and O&M programs.
- To maintain all airstrips and airports in the Yukon with the exception of major airports maintained by MOT.
- To operate ferries at Dawson City and Ross River.
- To provide professional engineering services and advice to the Commissioner and all Territorial departments.

Review of 1974-75

The Highway Maintenance Section maintained 1,803.2 miles of all weather roads on a year-round basis and 628.6 miles during the summer season or a total of 2,431.8 miles. The calcium chloride application program for dust control continued. The application of CaCl₂ is based on traffic density with those roads or sections of roads

with a traffic density of 250 vehicles per day or over during the period from May to October receiving this treatment.

The 55 ton ferry crossing the Yukon River in Dawson City serving mainly tourist traffic and mining traffic from the Clinton Creek Asbestos Mine carried 24,440 vehicles in 1974, which compares with 26,746 vehicles in 1973. The total number of passengers increased from 70,212 in 1973 to 86,362 in 1974. In addition to the Dawson City ferry a skyline was operated during spring ice break-up and fall freeze-up. During the winter an ice bridge was used. The operation of the cable ferry at the Ross River settlement over the Pelly River was continued and is mainly serving mining exploration traffic along the North Canal Road and around the Yukon-NWT boundary. In addition, 30 airstrips and two seaplane bases were maintained. The Mayo and Dawson City Airports were maintained on behalf of MOT. Highway Maintenance and related expenditures totalled approximately \$9.3 million.

The Highway Construction Section completed a number of highway improvement projects. The major projects were on the Stewart Crossing-Dawson Road from Mile 0 to Mile 65.5 where this road was brought up to Trunk Highway Standards. This road also received pavement for 2.3 miles at Dawson City. A number of short span timber bridges on the Campbell Highway were replaced with structural plate pipe arch culverts. The program to replace three temporary wooden bridges with new permanent bridges had to be cancelled as prices received were excessive. Sub grade construction in preparation of paving was completed from Mile 0 to Mile 6.9 on the Campbell Highway — this is from Watson Lake to the Watson Lake Airport turn-off. The Highway Construction Section was also involved in the construction of the new Robert Campbell Bridge over the Yukon River at Whitehorse, a project designed and supervised by the Federal Department of Public Works. A number of minor projects, such as guiderail installations and others, were also completed. Pre-engineering and design work for 1975-76 projects was completed. Expenditures under this section of the Department totalled approximately \$2.9 million.

Building Construction projects handled by the Architectural Section for all Departments of YTG totalled approximately \$5.6 million. The Robert Service School Addition in Dawson City was completed, as well as the addition to the Macaulay Lodge in

Whitehorse and the construction of the Watson Lake Tourist Information Centre. The Wolf Creek Juvenile Training Home is under construction and should be ready for occupancy early in 1975-76. Design and site preparations were completed for a new school at Ross River. A contract for this project was awarded at the end of the fiscal year. The first two phases of a major highway workshop addition in Whitehorse were completed and it is expected that the third and final phase will be completed in 1975-76. Construction proposals for the lease of a new liquor store in Whitehorse were handled. The Yukon Housing Corporation was assisted in designing 10 senior citizens' housing units, and in proposal calls and designs of a number of rental/purchase housing programs. A temporary highway maintenance garage for the Dempster Highway was designed for construction in 1975-76. A number of building renovation projects were completed. Designs were completed for administration buildings in Haines Junction and Mayo scheduled for construction in 1975-76. Considerable time was spent in connection with the new territorial administration building in Whitehorse which was designed by the federal Department of Public Works and is being constructed under that department's supervision. Project co-ordination, space allocations and other areas were covered.

The Building Maintenance Section continued to maintain all Territorially owned buildings with a staff of 32 tradesmen. All exterior and interior painting contracts were completed. Standard preventive maintenance programs were carried out. Due to the relatively mild winter only minor freeze-ups and frost damages had to be repaired. The total expenditure for building maintenance in 1974-75 was approximately \$773,000.

The Municipal Engineering Section continued to assist the Department of Local Government in community planning, land disposal and in the planning, designing and supervising of water and sewer extensions, new water and sewer systems and sewage treatment facilities. Major projects were in progress for completion in 1975-76 in Watson Lake, Haines Junction and Whitehorse. Minor projects were completed in Carmacks and Hillcrest. Designs were completed for major water and sewer projects in Porter Creek and Mayo for tender calls in 1975-76. Subdivision roads were laid out and constructed. This section was also

involved in assisting with the VHF Mountaintop Repeater System installation, the sewage collection system for Old Crow and a number of minor municipal type engineering projects. The section supervised work of approximately \$1.9 million.

The Department was actively involved in the formulation of implementation policies under the new Arctic "B" and "C" Airports Program of MOT. The provision of a VHF system for use by Territorial and Federal Government Departments in the Yukon was co-ordinated and is being implemented under the supervision of this Department. The Department employed 277 employees at the low point in March, 1975 and 543 employees at the high point in July, 1974. The total O&M expenditure for 1974-75 is approximately \$11 million.

Plans for 1975-76

Continuation of our Highway Maintenance and Building Maintenance Programs under established procedures and guidelines. Completion of a number of building and utility projects commenced in 1974-75.

Construction of a Temporary Maintenance Camp on the Dempster Highway which will be moved further north once the permanent Eagle River Camp is completed.

Continuation of improvements to purely Territorial Roads and Territorial Recreation Roads. Continuation of upgrading highways to Trunk Highway Standards under the Federal-Territorial Engineering Services Agreement. Co-ordination of moving departments and branches of YTG from a number of buildings into the new Territorial Administration Building. Co-ordination of VHF System services. Under a proposed agreement with MOT to commence implementation of first year of Arctic "B" and "C" airport program. To continue to provide professional engineering services and centralized architectural services to all YTG Departments.

Long-term Plans

Continuation of upgrading of existing Yukon road system to a point where all grades, alignments and width of roads are ready for paving. In cooperation with and through funding by MOT to up-grade over a number of years all airstrips classified as Arctic "B" or "C" to a point where they comply with the standards laid down for the program. To construct and to up-grade airstrips, not under the MOT Arctic Airports

Program in pace with the economic development of the Yukon. To improve existing highway and building maintenance procedures. To construct and to reconstruct buildings in line with changing needs for all Territorial Departments on a planned basis.

YUKON HOUSING CORPORATION

Responsibilities

The Yukon Housing Corporation is responsible for the development, provision and management of housing programs and projects throughout the Territory.

Review of 1974-75

In 1974 construction started on 62 Rental/Purchase housing units and 10 staff houses. In addition 24 leased townhouse units were made available for families on a subsidized rent-to-income basis.

Plans for 1975-76

The building program consists of 80 dwellings to be built under the Rental/Purchase Housing Program in Whitehorse and three outlying communities and to build 24 units of staff housing.

Long-term Plans

Where the demand for housing is demonstrated the Yukon Housing Corporation will continue to endeavour to provide accommodation in cooperation with local authorities and housing agencies.

To further respond to the housing needs of the individual communities, a study of housing needs and demands, delivery capacity of the building industry, and house designs will be undertaken. The results of the study will form the basis also for a comprehensive long-term housing policy.

DEPARTMENT OF LIQUOR CONTROL

Responsibilities

The Liquor Control Department regulates the importing, distribution and retailing of all alcoholic beverages within the Liquor Ordinance and attendant Regulations. The Department, in liaison with the Yukon Liquor Board, is also responsible for the issuance of all liquor licences and permits, and for the enforcement of the Liquor Ordinance.

Review of 1974-75

Total Sales (inc. surcharge) 1973-74

\$5,967,225.14

Total Sales (inc. surcharge) 1974-75

\$6,823,454.89

Increase in sales during 1974-75 14.34

per cent

Six Liquor Board meetings were held during the year, as well as six Hearings of Appeal regarding suspension of licences.

Seven suspensions of licences for licensed premises were issued and upheld varying from one day to the balance of the year.

The following liquor licences were issued during 1974-75:

| | |
|--------------------------------|-----|
| Cocktail Lounge (Liquor) | 37 |
| Club (Liquor) | 7 |
| Tavern (Beer) | 22 |
| Canteen (Beer) | 6 |
| Dining Room (Liquor) | 20 |
| Restaurant (Beer & Wine) | 36 |
| Off-Premises (Liquor on hours) | 55 |
| Off-Premises (Beer 24 hours) | 34 |
| Room Service Permits | 18 |
| Special Licence (Liquor) | 3 |
| Aircraft (Liquor) | 1 |
| | 239 |

Letters, newspaper advertisements, meetings with the Yukon Hotel/Motel Association and personal interviews were used in order that licencees would realize their full responsibility with regard to serving of intoxicated and underage persons.

The sale of ID cards commenced in June, 1974, receiving excellent response from both licencees and persons concerned. 522 ID cards were sold and issued during the fiscal year.

The following permits were granted and issued:

| | |
|------------------|-----|
| Special Occasion | 458 |
| Reception | 121 |

Plans for 1975-76

The institution of an empty beer bottle return system will take place early in the year. The Whitehorse self-serve liquor store premises will be relocated in a new building late in 1975 or early 1976. The self-serve liquor stores will also be relocated in new Territorial Buildings in Mayo and Haines Junction in 1975.

The Committee on Alcoholism, comprised of representatives from several Territorial and federal departments including Liquor Control, will continue its "Drinking and Driving" and misuse of alcohol programs.

Long-term Plans

To combine the objective of sales for profit revenue with a sense of moral obligation in order to assist in ensuring that the dignity and social well-being of the Territory's residents should not deteriorate through the misuse of alcoholic beverages.

The gradual up grading of licensed outlets in the Territory.

New liquor stores will be added in areas where population and activities warrant this service.

NATIONAL ENERGY BOARD (NEB)

Responsibilities

The National Energy Board is set up under a federal act to discharge set duties as a court of record for the purposes of regulating the construction and operation of transportation facilities for, and the export and import of, oil, natural gas and electricity. The Board reviews and sets rates and tariffs for pipelines under its jurisdiction. It also periodically inspects the financial records of companies under its jurisdiction. The Board also, independently, calculates established reserves of oil and natural gas in Canada to enable the calculation of surplus available for export.

In addition, in response to the advisory part of the act, the Board keeps under review and study various aspects of exploration, production, recovery, processing, transportation, distribution, sale, purchase, exchange or disposal of oil, gas or electricity, and offers advice to the Minister and the Federal Government, either on its own initiative or by direction from the Minister.

Applications for the export or import of oil, gas and electricity, and the construction of transportation facilities are reviewed and assessed in accordance with the terms of the National Energy Board Act and are rejected or recommended for approval to the Governor in Council.

The Board reviews and approves engineering drawings and specifications, environmental aspects and monitors the construction and testing of transportation systems before and during construction to ensure compliance to rules and regulations and safety standards before issuing a 'leave-to-open' order.

The Board has recently been assigned additional programs involving the oil export tax, the pricing of natural gas at the border

and the attendant rebate procedure, Petroleum Administration Act, natural gas allocation and the control of ethylene.

Review of 1974-75

A review of operations in the Annual Report for the 1974-75 year includes the following, some of which will extend into following years:

Export and import control of crude oil and products

Export and import control of natural gas

Export and import control of propane and butane

Oil Export Hearing

Interprovincial Pipe Line Limited application for Sarnia to Montreal pipeline

Applications for additional facilities from Westcoast Transmission Company Limited, TransCanada PipeLines Limited and TransMountain Pipe Line Company Ltd.

A hearing into the supply, deliverability and demand of natural gas

Application of Canadian Arctic Gas Pipeline Limited

Application of Foothills Pipe Lines Ltd.

Preliminary preparation for Polar Gas Project

Preliminary preparation for Beaufort-Delta Oil Pipe Line

Application by TransCanada PipeLines Limited for a coal gasification pipeline project

TransCanada PipeLines Limited rate hearings

Interprovincial Pipe Line Limited rate hearing

Exports and imports of electrical power

Continuing review of financial records of companies under Board jurisdiction

Continuing review of the environmental impact of various projects before the Board

Miscellaneous studies of oil, gas and electrical industry to provide advice to the Minister

Long-term Plans

The processing of applications to move oil and gas from remote northern regions to market by high pressure, large diameter pipelines is expected to be significant activity for the National Energy Board over the next decade.

Some of the technology required for the movement, e.g. inter island in the Arctic, has yet to be developed and the Board is watching developments closely.

NATIONAL FILM BOARD (NFB)

Responsibilities

The production of motion pictures, film strips, film strips, slide sets and still photo exhibits about the Canadian North, its peoples and their activities, its industries, resources, and institutions; the distribution of these materials in Canada and abroad; and the distribution in the North of such material interpreting Canada and exploring issues of national interest; counsel to federal government agencies concerning the application of audio-visual media and the planning, production and distribution of departmental films for information, instruction, training and cultural purposes.

Review of 1974-75

Staff

No full-time or part-time NFB staff reside in the North. Film crews, trainers and distribution representatives travel north on assignment.

Film Production

The NFB produced for its own program: *Arctic IV* and *In Search of the Bowhead Whale*.

The following language versions were completed during the year:

Sib-Igloo (French, Polish, Czech, Swedish, Danish, Dutch, Norwegian, German and Finnish)

Birth of a Legend (Polish, Greek, Cantonese)

Edge of Barrens (Polish)

Thanni (Cantonese)

Assignment Northwest (Dutch)

Sibou of Northern Canada (Dutch)

Le mariage du hibou (English, Inuit)

The Owl and the Lemming (German, Spanish)

The Owl and the Raven (German, Spanish)

The Department of Indian Affairs and Northern Development co-produced *Le mariage du hibou* with the NFB.

Departments commissioned films to the NFB as follows:

New Gold for Old — National Health and Welfare

Le défi du Grand Nord — National Defence

Peuplades de chasseurs/Man the Hunter — National Museums of Canada

Workshops were held at Cape Dorset and Frobisher to train Inuit film makers (co-sponsored by the departments and the NFB).

Distribution

The NFB's westernmost distribution region combines British Columbia and the Yukon. NFB services in the Yukon are provided through the Whitehorse Public Library, which has a film section, and also borrows from the NFB regional office in Vancouver. The NFB's Outpost Film Library for users in the North is operated from Edmonton for English titles and Montreal for French titles. Advice and organizational help in the Mackenzie District is provided by the NFB's representative in Edmonton, who makes two trips annually to the North. A student was hired during the summer to promote and show films from the Whitehorse Library.

Challenge for Change

A French language version of the *Cree Hunters of Mistassini/Chasseurs Cris de Mistassini* was produced. Two persons were

assigned on a temporary basis for a total of seven man-weeks in the Northwest Territories to promote the use of Challenge for Change Films.

Plans for 1975-76

The NFB's plans for its own program are as follows:

Completion of *Yukon* (Vancouver Unit)

Continuation of French production Unit's series on the development of Northern Quebec; first film, *Un Royaume vous attend*, will be completed in 1975-76.

Production work on six extra films on *Abitibi/Baie James* plus *Les Indiennes du Nord*, (two films). Completion of four filmstrips series: *High Arctic Heritage* in English and French.

Version Program — *Cree Hunters of Mistassini* No. 2 (French)

The NFB will complete films commissioned by the following departments:

Completion of *Greater Snowgoose* — Environment Canada

Continuation of Cape Dorset and Frobisher film workshops to train film makers and completion of *Natsik Hunting* and of *Sikusilarmiut* — co-sponsors: NFB/Northwest Territories Council

Completion of *Mackenzie Highway* — DIAND

Completion of *Three Above 60° N* — DIAND

Production of *Eagle River Bridge* in Yukon — National Defence

NATIONAL MUSEUMS OF CANADA (NMC)

NATIONAL MUSEUM OF NATURAL SCIENCES

Botany Division

Responsibilities

The Botany Division of the National Museum of Natural Sciences has an overall interest in botanical exploration and research in Canada's North.

Review of 1974-75

A joint phycological/ichthyological field trip was made to the western and northern section of Hudson Bay and the lower region of Boothia Peninsula and vicinity. Specimens were collected by scuba diving and dredging from 20 sites during July and August. Like previous trips to most other regions of the central and western Canadian Arctic Archipelago, these are the first records of benthic marine algal observations and specimens collected from the area.

Plans for 1975-76

Starting from Cambridge Bay, the marine algal survey of the central region of the archipelago will be extended northward to Cornwallis Island and surrounding islands.

A general survey and collection of vascular plants will be made from Yellowknife to Cambridge Bay and at Cornwallis Island and adjacent islands in conjunction with the above marine survey.

Long-term Plans

The marine algal survey will be concentrated in the mid-and more northerly sections of the archipelago.

Vertebrate Zoology Division

Vertebrate Ethology Section

Responsibilities

The Zoology Division of the National Museum of Natural Sciences is one of the primary contributors to the knowledge of animal species in Canada. Comprehensive faunal surveys are conducted and promoted, and the museum keeps important collections of fauna and flora. Its scientific collections of arctic material are among the best in the world. This division cooperated with other government agencies and scientists of other countries interested in problems of the North.

The N.M.N.S. High Arctic Research Station was established on Bathurst Island, N W T in 1968 in collaboration with the Polar Continental Shelf Project. The Vertebrate Ethology Section is undertaking detailed, long-term studies at the station to investigate the relationships between species of arctic animals and the behavioural adaptations that enable them to survive in high arctic environments. This small field station allows some university students to undertake research and promotes public interest in conservation in the high arctic.

Review of 1974-75

The research station was in operation from April 16 to September 15, 1974. The following projects were conducted:

Behaviour and ecology of the ivory gull.

The study of this rare and possibly endangered species was carried out on Seymour Island, the only known nesting site in the Canadian Arctic. Detailed information was collected on arrival in the nesting area, progression of reproductive cycle, colony

site selection, breeding chronology, formation of subcolonies, anti-predator behaviour vocalizations and effects of the weather. Observations were made during several largely unsuccessful re-nesting attempts following repeated predation by foxes.

Breeding Bird Census and Banding Program. Despite a general decline in numbers of bird breeding, information on nesting, egg-laying, hatching, incubation and fledging was recorded at 77 nests. The most common of the 12 species nesting were snow bunting, red-throated loon, black-bellied plover and glaucous gull. Using various techniques, 159 individuals of 12 species were banded and colour marked.

Behaviour and Ecology of Musk oxen.

Despite a drastic population decline due mainly to winter conditions ethological observations were continued with emphasis on behaviour of yearling and sub-adult muskoxen. Specimens were collected from 30 carcasses on southern Bathurst Island. New observations included reaction of muskoxen to severe snow conditions and progress of seismic activity in the study area.

Life History and Ecology of Varying

Lemming. Collection of data on population fluctuations in relation to weather conditions and burrow availability continued. Population estimates are based on trapping results. Specimens collected provide reproductive data used in determining breeding structure of the population.

Meteorology and Microclimatology.

Standard meteorological observations were made three times daily and aviation weather reports provided. Continuous records of sunshine, radiation, humidity, temperature and wind were also maintained and detailed microclimatological measurements were made at the station.

New Projects in 1974

Investigation of Food Preferences of Muskoxen, Peary Caribou and Arctic Hare. Food preferences were determined by observation of range-type utilization. The dominant range types were sampled to determine species, cover and forage production. Samples of fresh musk ox, caribou and hare faeces were collected for analysis of plant species composition.

Pond Invertebrates in the Vicinity of Bathurst Island Field Station. Qualitative sampling of freshwater invertebrates was carried out in 20 sampling areas, eight of which were visited at least weekly from the time of first melting. Both plankton and benthos were collected from ponds supporting both high and low populations of animals. These samples should yield a fairly complete record of the development of the fauna over the spring thaw and into the summer and provide preliminary data on life cycles of certain species.

Ecological and Distributional Studies of Bryophytes. This study included determination of habitat preferences of particular species of mosses and analysis of communities in which they occur, transect studies to determine changing environment factors along gradients, and collection of wind-blown plant debris to analyze importance of wind in dispersal of mosses and liverworts.

Soil Reconnaissance and Pedologic Investigations. Along with a general reconnaissance survey to investigate relationships between soil patterns and certain environmental conditions, mapping of soil types was conducted. Detailed soil morphology was recorded and samples collected for chemical, micromorphological and clay analysis.

Preliminary Studies of Free-living and Parasitic Mites. Free-living mites of approximately 22 species were collected by visual examination of the substrate in rocky areas and funnel extraction of sod samples. Four parasitic species were found on captured tundra lemmings.

Plans for 1975-76

The projects involving birds and mammals will continue and the ivory gull project will be expanded. New projects at the research station will include: utilization, classification and detailed mapping of the plant communities in the primary study area; behaviour and ecology of the Peary caribou. Breeding behaviour of the red-throated loon.

Long-term Plans

The current research at Bathurst Island will continue at least until September 1978. In order to gain good information on inter-specific relationships, population fluctuations, and effects of weather and climate in relation to behaviour, social organization, population sizes and breeding success, projects must be continuous and of long duration.

Many of the projects are continuations of those established in 1968. Some may become temporarily inactive when the species under study is present in very small numbers, does not breed, or is absent. Established projects tend to become more elaborate over a period of years.

Continuous records of phenological events during the field season are maintained and the station weather data are submitted to the Atmospheric Environment Services.

The continuing studies emphasize arctic animals in their undisturbed natural environment. The research area is being proposed as a wildlife preserve by the tundra panel of the International Biological Program.

NATIONAL MUSEUM OF MAN

Canadian Ethnology Service

Responsibilities

To document the cultural heritage of the native peoples of Canada, including research, material collection, and analysis and dissemination of information on the social, linguistic and material culture of the Indians and Inuit of the Yukon Territory and the Northwest Territories.

Review of 1974-75

Inuit Research

A variety of ethnological research projects were carried out in Rankin Inlet. In addition the following studies were made by outside workers under the Division's Urgent Ethnology contract program:

Trading alliances and partnerships of the West Hudson Bay Eskimo.

Derivational process in the Itivimiut Eskimo dialect of Nouveau Québec.

Traditional kayaks and their construction techniques.

The cultural basis of Eskimo social relations.

The study and reconstruction of an Eskimo qarmaq (semi-subterranean house) in Igloodik, NWT.

Lexicological study of the Eskimo language.

Manufacture of traditional clothing among the Igloodik Eskimos.

16 mm film study of techniques of sealskin boot manufacture in Coral Harbour, NWT.

Athapaskan Research

Research was conducted by contract ethnologists as follows:

Study of Eskimo ethnopyschology and emotional expression.

A field survey of the current status of northern Athapaskan culture in the Yukon and Northwest Territories will be initiated.

The following field projects are planned for completion by contract ethnologists through the Canadian Ethnology Service Urgent Ethnology Program:

Collection and analysis of basic linguistic data, with emphasis on both phonology and regional variations, among the Chilcotin and Carrier Athapaskans.

Collection of life histories from Athapaskan women from three age groups among the Han, Tutchone, Kutchin, Tagish and Inland Tlingit, YT to be used as a basis for studying culture change.

A study of economic organization, technology and exploitation of natural resources and continuation of a study of land use, especially as it applies to ethnogeography among the Tahltan.

Oral tradition and linguistic study of Kutchin in the Arctic Red River — Ft. McPherson region, NWT.

Comparative study of syntax of Central Mackenzie River Athapaskan groups, NWT.

Study of Northern Tutchone Ethnography and culture change, YT.

Ethnolinguistic study of the handgame among the Mackenzie River Athapaskans, NWT.

Life history study of Bear Lake and Mountain Indians, NWT.

Study of ritual practices and religious life of the Athapaskans at Ross River, YT.

Linguistic study of Hagwilgate Carrier.

Study of the nature, extent and causality of cognitive sharing and diversity among the Slavey at Ft. Liard, Ft. Simpson and Ft. Nelson, NWT.

Study of Hare grammar at Fort Good Hope, NWT.

Study of porcupine quill technology among the Athapaskans at Ft. Providence and other regions about Great Slave Lake, NWT.

Plans for 1975-76

Inuit Research

Research is planned on Inuit language, music and modern hunting techniques.

The following projects are planned for completion by outside Urgent Ethnology contract personnel:

Study of Netsilik Inuit music.
16 mm film study of modern hunting, trapping and fishing techniques in Southampton Island, NWT.

Athabaskan Research

The following field projects are planned for completion by contract ethnologists through the Ethnology Division Urgent Ethnology Program:

Study of the ecology and spatial organization of the contemporary population of Chipewyan at English River and to assess the adaptiveness of this group to ecological and cultural pressures to current rapid technological and social change attendant on opening a road into their region.

A study of aboriginal and contemporary patterns of Athapaskan burning techniques in northwestern Canada and to compare these patterns with changes in exploitation and settlement pattern.

Continuation of an age-graded comparative study of Hare language and to prepare a bilingual dictionary of the spoken language as at Ft. Good Hope, NWT.

Complete a study of the Kutchin language, NWT.

Investigate the material culture, social organization, and magico-religious beliefs of the Chipewyan at Black Lake.

A study of patterns of subsistence, land use, territoriality, ethnobotany and ethnozoology among the Chilcotin and Carrier.

Long-term Plans

To conduct field and archival research on the cultures of northern indigenous peoples. Staff members direct the work, but much of it is done under contract by outside personnel. One aim is to involve greater numbers of Indian and Inuit people in the documentation of their own cultural heritage so they can then use the material to teach their own cultural history.

Archaeological Survey of Canada

Responsibilities

To undertake research and rescue operations on the prehistory of Canada's native people.

Arctic Archaeological Research

In summer of 1974, surveying was continued around the Baker Lake settlement, District of Keewatin, NWT. Among six new sites, one found near the Thelon River Inlet contained an important series of seven Thule winter houses. These sites were tested, producing evidence that the Baker Lake Thule were caribou-hunters and autumn driftwood gatherers. Six weeks of digging at the Migod site on Grant Lake, Dubawnt River, produced a record of eight millennia of barrenland prehistory, covering locally the Shield Archaic, Pre-Dorset and Toltheheilei traditions.

Yukon

1974-75: No field work; laboratory research included the development of new experimental techniques for archaeological analysis, the application of a detailed attribute list to the analysis of materials collected in southwestern Yukon in 1973 and the transfer of video-tape technology of problems of archaeological research and teaching.

Mackenzie Basin

1974-75: No activity; research reports were prepared.

Rescue Archaeology — Contract Supported Projects

Yukon

A survey of the Dempster Highway from Mile 203 to the NWT boundary was carried out with assistance from Public Works Canada. Work was carried out on sections of the highway under construction or scheduled for construction on the Eagle Plain up the west slope of the Richardson Mountains to the NWT border. Many archaeological sites were recorded of which none appeared to be threatened by highway construction. The collections have not yet been analysed and their significance is not yet known. Except for analysis, the work is complete. No further field work is planned.

NWT

Public Works Canada provided funds for this brief survey of the section from Camself Crossing to the Willowlake River, NWT. Results were largely negative, with only sporadic evidence for prehistoric and historic occupation in the area. The work is complete, and highway construction is now proceeding in this section.

Two sites at the outlet of the Donnelly River from Chick Lake, NWT are threatened

by repeated flooding. The National Museum of Man provided funds for the work. Although a final report is still pending, the results were not such as to warrant additional work and the project is regarded as complete.

Survey of Kakisa Lake and River

This project was made necessary because a proposed dam near Lady Eudie Falls would raise the water level of Kakisa Lake, NWT. Northern Canada Power Commission provided the necessary funds. Most of the sites recovered were of historic age, and there was little evidence of prehistoric occupancy. Apparently, the region was first heavily exploited as a result of the fur trade. No further work is considered, in view of apparent abandonment of plans for this reservoir.

Excavations at Akpatok Island and the Diana Bay area

Prehistoric Inuit sites on islands in the Ungava Bay and Hudson Straits areas, NWT are threatened by gas and oil exploration activities. The National Museum of Man funded this project. Excavations at two sites yielded abundant artifacts, as well as faunal remains and data on house construction during the Thule period. Reconnaissance was carried out simultaneously, resulting in the discovery of sixteen new sites. Further work is planned with Canada Council support.

Excavation in the vicinity of Pond Inlet

Wave action is eroding Dorset Inuit sites at a rapid rate in this area of northern Baffin Island, NWT. The National Museum of Man provided support for salvage excavation at several of these sites, which has resulted in the recovery of a rich collection of Dorset wood, bone, and ivory artifacts, as well as details on house construction. Additional work will be carried out in 1975.

Plan for 1975-76

Portions of the upper Toltsoo, Elk and Dubawnt Rivers, District of Mackenzie, NWT will be surveyed in an expansion of the project testing the association of prehistoric groups with discrete caribou herds.

Plans have been developed for archaeological reconnaissance around Great Bear Lake during the summer of 1975.

Further excavation has been planned for the Gladstone site at Klwane Lake, southwestern Yukon during the 1975 field season.

Rescue archaeology will conduct survey and testing on sections of the Mackenzie

Highway scheduled for clearing and construction in 1975; survey of the Dempster Highway, NWT from Fort McPherson to the Yukon boundary; assessment of the damage to prehistoric Thule sites threatened by whalebone mining in support of the carving activity, and salvage excavations and survey at Aishihik Lake, Yukon Territory.

Long-term Plans

Long-range plans were devised to delineate the history and nature of indigenous occupation of the northern interior District of Mackenzie over the last 12,000 years, or how long man has occupied any part of the area, including evidence for any changes in the population (from or to palaeo-Indian, Indian, and Inuit).

Surveys have been planned for a large area of interior Yukon Territory as a part of the Bering Yukon Refugium Project (BYRP). BYRP is an interdisciplinary study of palaeo-environments in the unglaciated areas of the Yukon during the Upper Pleistocene. This long-range project will include studies of the sedimentology, geomorphology, palynology, palaeoentomology, palaeontology, and archaeology of the Beringian refugium. Archaeological evidence thus far consists of fossilized bone artifacts from a number of localities in the region, but undisturbed deposits of archaeological significance have yet to be located and excavated.

NATIONAL RESEARCH COUNCIL (NRC)

Responsibilities

Investigations into various phases of pure and applied sciences in northern Canada.

Review of 1974-75

Division of Physics

Continuous monitoring of cosmic ray intensities was carried out at three stations in northern Canada; Alert, Inuvik and Goose Bay. This work is part of an international program based on a world wide network of cosmic ray monitoring stations. The data is sent regularly to the World Data Centre and is distributed to interested scientists from there.

During 1974, experiments were flown on two rockets from Cape Parry in the NWT to study the dayside cleft region of the magnetosphere. The data obtained is currently being analysed. Data obtained earlier from Fort Churchill has yielded new information on magnetospheric electric fields at high latitudes.

Division of Building Research

The insulated road study was continued at experimental sites on the Mackenzie Highway near Inuvik. Observations to assess the long-term performance of building foundations and the airport runway and wharf at Inuvik were terminated in October 1974. Ground temperatures were measured periodically at a proposed bridge site on the Dempster Highway, YT to collect data for design of the bridge foundations. A preliminary analysis of the effect on the ground thermal regime of reconstructing and paving the Alaska Highway was made for the Department of Public Works. Planning for detailed studies on the Mackenzie Highway north of Fort Simpson was begun.

The Division's field station at Thompson, Manitoba continued to provide support for permafrost engineering and terrain studies in northern Manitoba. Regular observations on microclimate, surface energy exchange and ground temperatures were continued at several experimental sites at Thompson. Measurements of frost-heave forces and heat conduction on steel piles installed at Thompson in 1972 were continued. Studies of dykes constructed on thawing permafrost at the Kelsey, Kettle and Long Spruce Generating Stations on the Nelson River were continued in cooperation with Manitoba Hydro.

Ground temperature observations were made regularly at Churchill, Manitoba, Rankin Inlet and Hall Beach, NWT. Ground temperature cables were installed at three locations in the south-central Keewatin District for studies of permafrost conditions at the boundary of the discontinuous and continuous permafrost zones and on the proposed polar gas pipeline route.

Assistance was given in the survey of permafrost conditions being conducted by the Saskatchewan Government in connection with the Churchill River power development scheme. Assistance was also provided to the Iron Ore Company of Canada in their studies of permafrost distribution at Schefferville, P.Q. and in laboratory determinations of the thermal properties of iron ore.

Laboratory studies of the strength properties and deformation behaviour of frozen soils were continued. Additional laboratory investigations of the thermal properties of Mackenzie Highway soils were conducted.

Laboratory and field studies to determine the maximum force that ice can exert on structures and the stress and strains in ice covers were continued. Measurements of uplift forces exerted on piles by ice due to a

change in water level are being made. As a follow-up of a study conducted for the Department of Indian and Northern Affairs in 1973-74, the Division made an engineering analysis and monitored the performance of another ice platform constructed in 1974-75 near Melville Island to support an offshore drilling project. Instrumentation was developed for measuring vertical deflections of the ice.

Advice and assistance on northern building and geotechnical problems was provided to a number of industry firms and government departments and agencies by the Division.

Radio and Electrical Engineering Division

Ground-based spectrometric and photometric observations of auroral and airglow emissions in the ultraviolet, visible, and infrared regions were made from Fort Churchill, Manitoba and from Cape Parry, NWT. The data is being correlated with other data gathered by rockets launched from Churchill and Cape Parry and from spacecraft.

Plasma probes were flown on two rockets launched from Cape Parry, NWT, in the daytime auroral cleft region of the earth's magnetosphere. In addition, rocket experiments were instrumented and flown from Churchill for photometric measurements of aurora and for collection of cosmic dust.

Auroral radar equipment operated continuously at Poste-de-la-Baleine (Great Whale River), P.Q., Churchill and Thompson, Manitoba.

Auroral all-sky cameras were in operation at Poste-de-la-Baleine, P.Q., Moosonee, Ontario, and Churchill, Manitoba.

Space Research Facilities Branch

The Council through its Space Research Facilities Branch continued to operate the

Churchill Research Range (CRR) during 1974. Programs included the launching of scientific sounding rockets and balloons to investigate geophysical phenomena in the upper atmosphere on behalf of scientists from Canada, the United States and other countries. Associated ground based experiments were also carried out by scientists from various universities participating in these programs.

Recent observations from several spacecraft have stimulated considerable scientific interest in the dayside aurora which occurs in the northern hemisphere. A temporary rocket launch site was installed at Cape Parry, NWT during the fall of 1974 in support of a Canadian program. During the period between November 21 and December 15, 1974, two Black Brant rockets were successfully flown in the Canadian scientific study of the dayside ionosphere in the polar cusp region. The rocket borne experiments were complemented by ground based observations. The Branch provided these launch facilities and some personnel support to the University of California, U.S.A. which launched two Black Brant rockets in January 1975. This program was directed toward studies of the polar cusp by rocket-borne barium plasma injection at about 500 kilometres.

National Aeronautical Establishment

Aeromagnetic surveys of the Davis Strait and Baffin Bay, carried out at the request of the Department of Energy, Mines and Resources, were completed during 1974. The results of this survey, started in 1964, are being reported by the Geological Survey of Canada.

Plans for 1975-76

Division of Physics

It is planned to continue the rocket and cosmic-ray monitoring programs at about the same level as in 1974.

Division of Building Research

Cables will be installed and ground temperature observations begun at several locations along a proposed polar gas pipeline corridor through the Keewatin District. Microclimate and terrain studies of permafrost at Thompson and measurement of ground temperatures in northern Manitoba and Keewatin District will be continued.

The program to measure frost-heave forces on foundations at Thompson, Manitoba may

be expanded. The study of insulated roadways on permafrost on the Mackenzie Highway near Inuvik will be continued and the Division will participate in field studies to monitor the performance of the highway at more southerly locations. Evaluation of the performance of various engineering structures and facilities on permafrost at Inuvik, Thompson and Gillam, Manitoba will be continued. Further development of equipment and methods for the measurement of the strength and thermal properties of frozen soils in the field and in the laboratory (including model studies of foundations) will be undertaken.

Field tests are being considered to better define the long-term load bearing capacity of ice covers and to measure *in situ* stresses and strains in ice covers at sites where significant pressures occur. Laboratory investigations on uplift forces exerted by ice on piles due to change in water level will be continued. Work on the mechanical properties of ice will be expanded to include sea ice.

Radio and Electrical Engineering Division

Geophysical observations for the I.M.S. (International Magnetospheric Studies) will commence in 1976. Observations will be essentially a continuation and expansion of on-going auroral programs.

Instruments for the observation of aurora and airglow will continue in use at Poste-de-la-Baleine, Churchill, and Moosonee on a routine basis. Auroral and airglow observations in the ultraviolet, visible, and infrared regions of the spectrum, will be made during selected periods of the winter of 1975-76 from Churchill and possibly from Thompson and one other site.

The network of auroral radars will continue in operation at Churchill, Thompson, and Great Whale.

Plasma probes and photometers will be flown on rockets to be launched from Churchill.

Space Research Facilities Branch

Operation of the Churchill Research Range will be continued for the launching of scientific sounding rockets and balloons to investigate geophysical phenomena in the earth's atmosphere and in space on behalf of scientists from Canada, the United States and other countries.

The Branch does not have a rocket program for the NWT for 1975-76. However, support will be provided to the University of California U.S.A. which is proposing to

conduct more rocket-borne experiments from Cape Parry. Support would mainly be in the loan of launch facilities and some personnel help in the co-ordination of activities with Canadian Government and other agencies.

The Great Whale Geophysical Station will continue the work of auroral photography and photometry and making a variety of radio-frequency measurements for Canadian and U.S. agencies. This station will be important in Canada's contribution to the International Magnetospheric Studies Program planned for 1976-78.

A balloon launch program of five to seven flights during July and August has been proposed by the University of Calgary. The purpose of the program is to study the precipitation of electrons over large regions on a time-correlated basis in collaboration with the Max Planck Institut für Aeronomie, Lindau/Harz, Federal Republic of West Germany.

National Aeronautical Establishment

Following completion of the Davis Strait and Baffin Bay aeromagnetic survey, the National Aeronautical Establishment plans to initiate a similar aeromagnetic survey of the continental shelf north of Ellesmere Island and Nansen Sound, a survey of the eastern part of the Alpha Ridge and one flight which will pass over the North Pole. This survey will take place in April 1975 and will be carried out at the request of the Department of Energy, Mines and Resource utilizing the North Star aircraft of the Flight Research Laboratory.

Long-term Plans

Several Divisions of the National Research Council have a continuing interest in the North.

The Division of Physics is involved in studies of space radiation from stations in northern Canada; these studies include ground based cosmic ray observations and rocket measurements of charged particles in the earth's magnetosphere.

The Division of Building Research conducts studies of permafrost, snow and ice and northern building problems.

Studies of the aurora, airglow, and other phenomena occurring in the upper atmosphere previously carried out within the Radio and Electrical Engineering Division, will be transferred in 1975 to the Planetary Sciences Section of the new NRC Herzberg Institute of Astrophysics. These studies

employ radio, optical, and plasma measurements, with observations made by ground-based and rocket-borne instrumentation.

The Space Research Facilities Branch operates the Churchill Research Range, the Great Whale Geophysical Station, a launching facility at Resolute, and co-ordinates scientific programs conducted at these and other locations in Canada.

Other Divisions of the National Research Council become involved periodically with northern work on a short-term basis. For example, the Ship and Marine Dynamics Laboratory of the Division of Mechanical Engineering is concerned with the design and development of ice breakers and the general ice environment as it affects northern shipping operations. This laboratory has been extending the knowledge of the resistance of ships in ice to the design considerations for installed power and has been providing consulting advice on this subject. In addition, continuing activities within the Division of Chemistry are of significance to northern development. Considerable data has been obtained in the Division's laboratories on the nature and properties of hydrocarbon gas hydrates and studies related to the extraction of bitumen from the Athabasca tar sands have been carried out for some years.

NORTHERN CANADA POWER COMMISSION (NCPCC)

Responsibilities

To provide public utilities in the Yukon and Northwest Territories as authorized by the Governor-in-Council. To operate plants from consumer revenue on a self-sustaining basis including repayment of capital expenditures.

Review of 1974-75

Gross generation of electrical energy in the North increased to approximately 15,041,000 KWH or 8.1 per cent more than in 1973-74. Of this, 71.1 per cent was provided by hydro from two plants in the Yukon and two plants in the Northwest Territories.

Five diesel-electric plants; Arctic Bay, Frobisher Bay, Lac La Martre, Pond Inlet and Repulse were transferred from the Government of the Northwest Territories to NCPCC ownership. The Ministry of Transport operation in Coral Harbour was taken over in October 1974 and is awaiting formal transfer to the Commission. Arrangements were also completed during the year to assume operation of the MOT facility in Resolute, pending Treasury Board approval at the end of the year. Another hydro development scheduled to go into operation in 1976 was started on the Snare River in the Northwest Territories. It will add 12 megawatts to the existing Yellowknife system.

A diesel-electric plant was completed at Johnson's Crossing, Yukon Territory bringing commercial electricity to the community for the first time. Clearing work for proposed transmission lines to Ross River and Fairbanks Junction to extend hydro supply from the Whitehorse system was started with scheduled completion expected in mid 1975.

Due to increasing electrical demand, additional diesel capacity was installed in

various locations. Upgrading and improvement of existing facilities was also carried out. Extensive renovations and reinforcements were made to the utilidor system in Frobisher, along with modifications to the water system.

Investigations to determine potential sources of hydro power are being carried out on a continuing basis. An intensive study was made of five potential hydro sites in the Yukon. An application has been filed with the Northwest Territories Water Board for a water licence for an additional plant on the Taltson River.

Plans for 1975-76

The Aishihik hydro plant in the Yukon is expected to be commissioned in mid 1975, adding some 30 megawatts to the existing Whitehorse system. The reconstruction of the 20-year old Marsh Lake dam will be started this year and it is anticipated that the fourth unit of the Whitehorse plant will also be started.

It is anticipated that the increased capacity at Taltson will be accomplished in two steps, the first being the addition of four megawatts in 1975-76, and the second by the addition of another hydro plant downstream of the existing plant. Final arrangements for the takeover from the Northwest Territories Government of various small diesel plants, including Sanikiluaq and Port Burwell should be completed during the year. An electrical distribution system and diesel-electric plant are also proposed for Rae Lakes.

The transfer of our Moose Factory operation to Ontario Hydro is also expected to be finalized.

Long-term Plans

To provide optimum service, the Commission will continue to monitor the increasing energy demands of the North and conduct investigation and engineering studies to ensure that demands are met in the most suitable manner. The Commission will utilize available expertise to design and implement projects which are economical in terms of cost and in keeping with the environment in which they are situated, so as to serve best the interests of all the northern people.

NORTHERN TRANSPORTATION COMPANY LIMITED (NTCL)

Responsibilities

Northern Transportation Company Limited has operated throughout the Mackenzie River system and the Western Arctic coast for over 40 years. The Company's marine operations have been the principal transportation lifeline serving general community freighting needs and providing logistic support for oil, gas and mineral exploration and development. Since 1944, NTCL has transported in excess of 4.6-million tons of freight over its 5,000-mile system. The Company operates a fleet of three ocean-going ships, 29 diesel tugs and 167 all-steel, dual-purpose barges with capacities of up to 2,250 tons, providing an aggregate gross tonnage in excess of 100,000 tons. The marine operations are supported by an air-cushion vehicle division and a trucking subsidiary. During the normal May to October navigational season, NTCL employs approximately 950 persons, many of whom are residents of the region it serves.

Review of 1974-75

During the year under review, the Company encountered the worst weather conditions in its history. While the total marine volume handled was 337,000 tons compared with 328,000 tons in 1973, freight moved in support of oil and gas exploration rose by 473 tons over the 1973 level to 99,795 tons. Of this, shipments to the Alaskan North Slope increased from 2,266 tons in 1973 to 14,432 tons in 1974.

Forecasts developed prior to the opening of the marine season indicated that it would be unnecessary to operate all of the Company's vessels. In fact, it became necessary to mobilize the total fleet in order to be able

to cope with the abnormal and persistent ice conditions in the Arctic and the general freeze-up which occurred earlier than normal throughout the entire system. Gale-force winds and severe storms created the most challenging operating conditions encountered during the four decades of Company activity in the North. Despite immense difficulty, all community resupply and essentially all other freight was successfully delivered. However, a great deal of the Company's marine fleet was unable to return to its home ports and was wintered at various locations along the Arctic Coast between Prudhoe Bay and the Boothia Peninsula and in the Mackenzie River at Inuvik and Norman Wells. Had the marine operating season reflected something approximating the normal historical weather pattern, a greater amount of cargo could have been moved without the need for the costly mid-season mobilization of reserve floating equipment.

The Company's involvement with-air cushion vehicles (otherwise known as ACV's or hovercraft) began in 1972 when an evaluation of the Bell Aerospace Canada 25-ton payload *Voyageur* was undertaken for the federal Ministry of Transport. Also in that year, the Company acquired two used British SR-N6 hovercraft which were completely rebuilt and modified in the shops of its associate company, Eldorado Aviation Limited. This resulted in Northern Transportation becoming the sole commercial owner-operator of amphibious ACV's in North America. The first ACV was placed in operation for Imperial Oil in 1973 and the second was chartered to Sun Oil in 1974. During the brief 15-year history of their development, these unique craft, due to their highly specialized nature, have often proven difficult to operate with any measure

of reliability or financial success. The Company has been able to deploy its ACV's for personnel transport, resupply and safety standby services in support of offshore arctic drilling operations in the Beaufort Sea. The operation has thus far proven to be both highly successful and profitable.

The Company acquired the ownership of Grimshaw Trucking and Distributing Ltd. in 1973, with a view to extending its inter-modal services and making interlining possible between rail or truck and water transportation at Fort McMurray and Hay River. The operations of the subsidiary were considerably restructured and streamlined in 1974, and gross operating revenue rose by 28 per cent over the preceding year. Service to the Company's customers has been markedly improved through the acquisition of 22 new highway-tractors, 10 pick-up and delivery trucks and 32 trailers. The opening of a new maintenance shop at Edmonton in the latter part of 1974 is also expected to significantly improve operating efficiency.

The Company was directed by the Government of Canada to establish a Churchill-based marine resupply service to the six Keewatin communities, commencing in 1975. The \$7,500,000 initial investment will make available the services of custom-designed equipment consisting of a 126-foot, 3,275 h.p. triple-engine coastal tug and four 2,250-ton capacity all-steel dual-purpose barges. Sailing via the Panama Canal, and after experiencing weather delays in the Caribbean area, the new fleet completed the 7,500-mile, 48 day voyage from Vancouver B.C., to Pictou, N.S., where it will spend the first winter only. The marine equipment will arrive in Hudson Bay in the latter part of July of 1975, and it is estimated that approximately 19,000 tons of cargo will be carried the first year.

Plans for 1975-76

The Company anticipates, at the most, a modest increase in marine tonnage for 1975. The remote wintering of much of the floating equipment will create certain operational difficulties at the beginning of the season, and it is expected that the total fleet will be fully utilized throughout the operating year in order to ensure the delivery of all marine cargo. ACV operations should remain profitable and trucking operations are expected to achieve a profit. In view of the uncertainty surrounding the 1975 season, a capital expenditure program of \$4,850,000 will be directed essentially at the completion of projects already authorized and for ongoing improvements to shore facilities and the replacement of equipment necessary for freight handling.

Long-term Plans

The intermediate to long-term position of the Company must be regarded as being quite favourable. Northern Transportation is Canada's largest and most experienced northern marine transportation operator. As the owner of a modern fleet and extensive strategic shore installations, the Company is in a unique position to benefit from any substantial economic development in the North. Geographical expansion coupled with nodal diversification into trucking and ACV operations have further consolidated the future growth potential of the Company. While both national and international economic conditions may temporarily impede the large-scale identification and extraction of oil and gas from the northern regions, the Company remains convinced that the future North American demand for assured sources of hydrocarbon energy will result in massive exploration and development projects, including pipelines, in the Company's area of operations. Northern Transportation is well prepared to undertake the expansion necessary to cope with such developments, and should be capable of realizing the financial benefits that participation in them will create.

POST OFFICE DEPARTMENT

Responsibilities

Provision of postal service in the Yukon and Northwest Territories.

Review of 1974-75

A new position of Area Manager was established at Yellowknife, this has enabled the Post Office to more adequately respond to service needs of the Northwest Territories.

The frequency of the Air Stage Service Hay River to Fort Simpson was increased from two to three trips per week for mail transportation. A suburban mail delivery service was established at Yellowknife. Helicopter service availability during freeze-up and thaw periods was established but was not necessary to be used during the year.

Plans for 1975-76

The growth of Whitehorse will require one additional letter carrier route for door-to-door mail delivery.

A review is planned of alternatives to present service with the possibility of inaugurating letter carrier delivery service at Yellowknife.

Long-term Plans

To provide adequate postal service, including mail transportation services to and throughout the Territories.

ROYAL CANADIAN MOUNTED POLICE (RCMP)

Effective July 1, 1974, "G" Division relinquished the Yukon which was established as "M" Division with Headquarters at Whitehorse, Yukon Territory. "G" Division Headquarters was relocated, moving from Ottawa to Yellowknife August 16, 1974 without disruption in continuation of services. Several members and their families including single Public Service personnel moved to Yellowknife and Whitehorse from Ottawa and elsewhere. This now makes for closer and better liaison with the general public and personnel in the field. Suitable and adequate facilities were added by the construction of a new wing to the Henry Pearson Building in Yellowknife, which houses not only administrative offices but brings together certain operational units to respond more efficiently and effectively to their responsibilities. Modern training facilities have also been provided for intensive training for both "G" and "M" Divisions dealing particularly with unique northern requirements.

Northwest Territories "G" Division

Responsibilities

The Royal Canadian Mounted Police in "G" Division is responsible for policing the Northwest Territories. Its objective is to enforce laws and ordinances. In this, it acts as a federal force and as a territorial force under contract with the Territorial Government.

Review of 1974-75

New cell cabins were set up at Cape Dorset and Fort Good Hope Detachments. Cape Christian Detachment was closed and a new detachment at Clyde River opened.

Telecommunications are continually being updated and improved. A computer

terminal has been installed at Yellowknife which provides access to our Ottawa computer as part of the C.P.I.C. system. This provides instant information on the records and movements of criminals as well as other valuable information.

Emphasis is placed on our Police/Community relations program. In most settlements our members provide leadership to the young people and act as organizers, coaches and instructors in sports and other recreational endeavours.

Emphasis is placed on the recruitment of natives as regular members and public servants. Two Inuit and one Indian became regular members of the Force. Our Special Constables are receiving training for the first time to become more active and competent in police enforcement. An Inuit Special Constable has successfully taken nominal charge of our detachment at Lake Harbour.

Liquor abuse is still the greatest problem and is considered to be the cause of the majority of offences committed in the North. Our members endeavour to enlighten the native people by explaining the laws and helping them to avoid this problem.

Plans for 1975-76

Construction of a new modernized southern type detachment complex at Fort Simpson.

To identify additional posts where a native qualified special constable can take charge as at Lake Harbour.

To introduce a new rotational policing concept which will provide a police presence on a scheduled and prolonged basis in remote settlements. In line with this program we are updating our patrol cabins and/or trailers to accommodate our members. In 1975, trailers will be on the site at Fort Franklin and Wrigley.

Long-term Plans

Long-term plans are continually under review to provide the manpower and facilities for the best police protection that is possible. With the economic development taking place in the North today the Force must be flexible and always look ahead in its efforts to meet the many situations that arise.

Yukon "M" Division

Responsibilities

Responsible for policing the Yukon Territory. Basic responsibility is to preserve the peace and maintain law and order, which includes the enforcement of Federal Statutes and Territorial Ordinances.

Review of 1974-75

"M" Division was officially opened on July 1, 1974, and consists of Division HQ's located in Whitehorse and eleven permanent detachments with a total staff of 91.

Beaver Creek Detachment is now permanent after having operated on a trial basis for one year.

The Whitehorse Airport Detail has been in operation for one year and is staffed by one regular Corporal and six Special Constables.

Plans for 1975-76

Construction of a new building in Whitehorse to accommodate Division HQ's, Whitehorse Detachment, and other Sections, planned for commencement in 1974-75, was deferred and is now scheduled for commencement in the summer of 1975.

Delivery and siting of married trailer-unit accommodations at Watson Lake.

Delivery and siting of married trailer-unit accommodation at Ross River.

Delivery and siting of garage unit at Ross River.

To continue and intensify our training program to produce better qualified police, knowledgeable in new methods and techniques.

To strengthen and maintain good police/community relations by producing and developing preventive policing programs.

Long-term Plans

Our long-term plans are continually under review to provide adequate detachments and manpower to meet requirements. Development of the North is the single most significant factor affecting these plans.

At the present time it is proposed to establish a police service-dog section in Whitehorse. It is also expected that future additions to manpower will necessitate additional married accommodations at Beaver Creek, Dawson City, Haines Junction, Teslin, and Watson Lake as well as renovations to office and single-quarters accommodation at Watson Lake.

Our long-term plans also include the construction of an aircraft hangar at Whitehorse and a patrol cabin on the Dempster Highway in the Dawson Detachment area.

STATISTICS CANADA

*Agriculture Division***Responsibilities**

To publish statistics on wildlife pelts.

Review of 1974-75

Fur Production — Data were obtained on the numbers and values of pelts taken. The number of pelts bought from trappers and the prices paid were provided by the Government of the Northwest Territories. The number of pelts exported from the Yukon and the prices paid to trappers were provided by the Government of the Yukon Territory.

*Labour Division***Responsibilities**

Unemployment Insurance Statistics

To publish statistics on the operation of the Unemployment Insurance Act.

Review of 1974-75

Unemployment claims for the Yukon are handled by an Unemployment Insurance Commission office in British Columbia and aims for the Northwest Territories by offices in Alberta, Manitoba and Québec. These offices provide information for the two regions. Statistics on claims and benefits for the Yukon and Northwest Territories are published regularly.

*Labour Force Survey***Responsibilities**

To estimate the number of persons employed, unemployed or not in the labour force, using a monthly sample survey of households.

Review of 1974-75

The Labour Force Survey does not at present collect information in the Yukon and Northwest Territories.

Long-term Plans

The feasibility of extending the Labour Force Survey to include the Yukon and Northwest Territories is being studied as part of the current revision of the Labour Force Survey scheduled for completion in 1976.

Manufacturing and Primary Industries Division**Responsibilities**

To publish statistics on manufacturing, mining, logging, fishing and energy.

Review of 1974-75

Industries surveyed accounted for 99 per cent of the value of production of the Territories' goods-producing industries, excluding construction for which data are not published. Data are published separately for the Yukon and Northwest Territories on mining, fishing, manufacturing and electric power statistics. In addition, for the Yukon, monthly and annual data are published on pipelines.

For the two territories combined, data are published for logging and for the crude petroleum and natural gas industry.

Plans for 1975-76

To continue the present expanded program of publication.

Long-term Plans

To expand the current statistical program.

*Prices Division***Responsibilities**

The measurement of certain elements of the living cost differentials encountered by Federal Government staffs serving in the more remote parts of Canada. These measurements, which are undertaken on behalf of the Treasury Board, are to assist in the establishment of appropriate allowance levels for the recruitment and retention of personnel serving at isolated locations.

Review of 1974-75

Surveys completed in the Mackenzie District of the NWT, Northern Alberta; Northern Saskatchewan; Eastern Hudson's Bay region, Central Quebec and N.W. Ontario.

Plans for 1975-76

Surveys on West Coast of British Columbia; the Yukon Territory and Northern Manitoba.

Long-term Plans

Streamlining of survey and index production procedures so that indexes may be produced for each post on a more frequent basis.

Public Finance Division**Responsibilities**

To publish statistics on the financial operations of all levels of government in Canada as well as government employment and payroll statistics.

Review 1974-75

The Public Finance Division published data on revenue, expenditure, assets and

liabilities of the governments of the Yukon and Northwest Territories for the fiscal year ending March 31, 1972, as well as for local government for the fiscal year ending closest to December 31, 1971. Statistics are also published on the current estimated revenue and expenditure for both territorial and local governments in the two Territories. Data were published on employment and payrolls in territorial governments and the control and sale of alcoholic beverages.

Plans for 1975-76

To continue the present program to publish data quarterly on revenue and expenditure of provincial governments and eventually territorial governments.

Long-term Plans

To publish data on quarterly revenue and expenditure of local governments in the Yukon Territory and Northwest Territories and on quarterly assets, liabilities and the sources and uses of funds of the territorial and local governments.

Transportation and Communications Division

Responsibilities

To publish statistics covering rail, water, motor vehicle and air transport, as well as telecommunications systems, broadcasting and cable television.

Review of 1974-75

Road Transport

For-hire trucking firms operating in the Yukon and Northwest Territories are being surveyed for financial and operating statistics.

Rail Transport

Statistics quarterly and annually show, for the Territories combined, commodity data in tons for 320 SCC — based commodity classes by originations, terminations and receipts from and deliveries to U.S. connections.

Water Transport

Shipping reports show statistics on cargo and vessel movements relating to Churchill, Manitoba, and Frobisher, Northwest Territories. Grouped data are given on other northern ports by province of location and as "Other, Northwest Territories". Ports on the Yukon and Mackenzie River systems are

not covered. The available statistics do not include the operations of government vessels.

Air Transport

Aircraft movement statistics, collected from daily reports by air traffic controllers and airport managers are prepared for the Ministry of Transport. Information received from this source covers six airports in the Yukon and 15 in the Northwest Territories. Statistics are also released on four Northwest Territories airports administered by the Atmospheric Environment Service of Environment Canada.

Communications

Statistics cover telecommunications, telephones, radio, television and cable television. To maintain confidentiality, the data for the Territories are combined or included with British Columbia. Data on the number of telephones are shown separately for Yukon Territory and Northwest Territories.

Plans for 1975-76

Publication of reports on the motor carrier industry will be resumed. Subject to confidentiality constraints, Yukon Territory and Northwest Territories will be shown separately.

Long-term Plans

Extension of the Shipping Survey to include ports on the Yukon and Mackenzie Rivers and their tributaries is under consideration.

Construction Division

Capital Expenditures in the North

Results of a recent survey indicate a decline in 1975 capital spending by the private and public sectors after the peak 1974 total for the Yukon and Northwest Territories. The new total of \$400.1 million is 7.5 per cent below the \$432.5 million estimated for 1974 but still 7.6 per cent higher than the \$371.8 million for 1973. The comparable total for 1972 was \$305.3 million. Expenditures by the primary industries continue to represent the largest part of the all-industry total at \$241.3 million in 1975, \$271.7 million in 1974, \$221.2 million in 1973 and \$200.6 million in 1972.

Education, Science and Culture Division

Responsibilities

In cooperation with the Departments of Education of the Territories, to compile and publish statistics on schools, teachers, students and finance for elementary and secondary education.

Review of 1974-75

All surveys respecting education in the Territories were carried out successfully. The survey of teaching staff was revised to be made compatible with surveys of provincial educational systems.

Plans for 1975-76

No change from 1974-75, except that a special data retrieval system will be in operation for ease of access to the information on teaching staff.

INSTITUTIONAL AND PUBLIC FINANCE BRANCH

Notifiable Diseases

Responsibilities

To collect, each week, reports of new cases of certain epidemic and infectious diseases.

Long-term Plans

No significant changes are planned.

Review of 1974-75

A weekly summary report and an annual report on notifiable diseases are published.

Plans for 1975-76

Activities are expected to be the same as in 1974-75.

Tuberculosis

Responsibilities

To publish information on new active and reactivated cases, out-patient drug treatment and institutional data.

Review of 1974-75 Operations

Statistics on new and reactivated cases and details of in-patient and out-patient treatment were published.

Plans for 1975-76

Activities are expected to be the same as in 1974-75.

Cancer

Responsibilities

To collect information on new primary cases of cancer occurring in the population.

Review of 1974-75

Information on new cases of cancer in the territories was abstracted from available hospital morbidity data.

Plans for 1975-76

Data for additional years will be sought and added to the current data bank for research purposes.

Hospital Morbidity

Responsibilities

To collect Admission/Separation data from General and Allied Special Hospital cases of residents of the Yukon and Northwest Territories.

Review of 1974-75

Reports on cancer cases were abstracted to add data to the National Cancer Incidence Reporting System.

Plans for 1975-76

Data for 1970-1973 will be collected.

Long-term Plans

Annual tables will be prepared when Admission/Separation Forms are coded.

Vital Statistics

Responsibilities

Data from Vital Statistics offices of the two Territories are used by Statistics Canada for compiling national vital statistics and providing the Territorial Governments with pertinent annual tabulations.

Review of 1974-75

Detailed tabulations for 1973 births, deaths, stillbirths and marriages were provided to the northern administrations. Revised registration forms were printed for the Government of Yukon Territory. The format and content of the forms was based on models recommended by the Vital Statistics Council for Canada.

Plans for 1975-76

Activities are expected to be the same as 1974-75.

Hospitals

Responsibilities

To publish statistics of general and allied special hospitals and mental and tuberculosis hospitals, including those in the Yukon and Northwest Territories.

Review of 1974-75

Forty-four general and allied special hospitals were operating in the Yukon and Northwest Territories at the end of 1973. Five were public hospitals with a total of 185 beds, and 39 with a total of 260 beds were federal. Annual returns were sent to the hospitals through the Yukon Territorial Hospital Insurance Services, the Northwest Territories Health Care Plan and the Department of National Health and Welfare (Medical Services). Statistics for 1972 were published in 11 reports. The Quarterly Hospital Information System was changed to include additional information and provide hospitals not only with provincial and regional comparisons but also with national values for the performance indicators. The Canadian Schedule of Unit Values for Clinical Laboratory Procedures was again revised.

Plans for 1975-76

Continuation of present programs with the publication of the results of two special surveys, one on blood bank activities and the other on hospital emergency services; and a continued effort for improving the timeliness of publications.

Long-term Plans

A revised annual reporting form is being prepared for 1976 to include in a single reporting system all general, allied special and mental and tuberculosis hospitals. Also planned is a Canadian schedule of unit values for radiology procedures to help hospitals report uniformly.

Health Manpower

Responsibilities

To collect and publish detailed statistics on a variety of Occupational Groups providing service in the health field. Currently, demographic and socio-economic data is available for registered nurses, physiotherapists, radiological technicians.

Plans for 1975-76

It is planned to expand the data base to include dental hygienists, dentists and pharmacists in the fiscal year 1975-76.

Mental Health Section

Responsibilities

To publish statistics on residents of the Territories who are patients in provincial psychiatric institutions.

Long-term Plans

There are no psychiatric in-patient facilities in the Territories that submit information to the section but psychiatric units are expected to be established soon.

Special Care

Responsibilities

To collect data describing special care facilities, institutions other than hospitals such as nursing homes and community health centres, their operations, services provided and the characteristics of their clientele.

Review of 1974-75

In 1974 an inventory survey was conducted on a national basis. Information was collected on 18 residential facilities with 189 occupied beds in the Yukon and Northwest Territories.

Plans for 1975-76

To repeat the inventory survey as above and, further, to collect operational statistics on the residential facilities.

Long-term Plans

To collect the data mentioned for 1975-76 on an annual basis together with data on non-residential facilities such as community health centres and clinics, their services and clients. Also, data on home care services.

Judicial Division

Responsibilities

To publish nationally comparable statistics on law enforcement, the administration of justice in the courts, and the corrections component of the criminal justice system.

Review of 1974-75

Various publications of the division contain statistics of the Yukon and Northwest Territories. Included are data on criminal and other offences, juvenile delinquency, police administration, traffic enforcement, correctional institutions and murder.

The current Uniform Crime Reporting Program comprises respondents from the Yukon and Northwest Territories through the Royal Canadian Mounted Police.

Court activities included a field trip to the Yukon Territory in 1974 to negotiate for the development and implementation of a legal/statistical information system to replace the currently used Statistics Canada form.

A special survey, conducted on a national basis of civil courts, sampled courts in the Yukon and Northwest Territories in 1974-75. Collection of the data necessitated visits to certain civil courts by Statistics Canada field personnel.

A further trip in the same year consisted of discussions in the area of the probation and adult institutions for the purpose of developing data exchange in the area of correctional statistics.

In September and October of 1974 a survey of motor vehicle thefts in Canada was conducted and this included participation from the Yukon and Northwest Territories, essentially from the same respondents utilized in the Uniform Crime Reporting Program.

In June, 1974 a Federal-Provincial Conference on Criminal Information and Statistics was held in Ottawa as a result of the expression of the necessity for discussion and communication on statistical information needs and systems. Representatives from the Yukon and Northwest Territories continue to participate on a Federal-Provincial Steering Committee in this connection.

Plans for 1975-76

Plans include the implementation of the surveys negotiated in 1974-75 for adult and juvenile courts, probation and adult institutions.

Long-term Plans

To continue to publish nationally compatible data on integrated surveys monitoring the criminal justice system through continued cooperation with the Governments of the Yukon and Northwest Territories.

TRANSPORT CANADA (MOT)

ARCTIC TRANSPORTATION AGENCY

The Arctic Transportation Agency determines and controls development of the transportation infrastructure in the Territories which comes under the Ministry of Transport. The Agency aims to provide transportation systems which will contribute to the achievement of the national objectives for northern Canada. To do this most effectively, it is necessary to continually assess the alternate uses to which the limited transportation resources may be put, and to establish priorities.

Co-ordination and consultation with the Territorial Governments, industry and other organizations, is essential. The Agency is involved in formulating the plan for transportation systems in the Territories, including the air and marine modes as well as the use of road, rail, pipeline, hovercraft and other facilities so as to ensure appropriate and improved intermodal services in the North. Co-ordination with other government departments and agencies is carried out through the Advisory Committee on Northern Development and the Task Force on Northern Oil Development. The role of Transport Canada and the activities of these committees is centred in the Arctic Transportation Agency, and its Administrator is Chairman of their respective transportation sub-committees.

The Agency continues to accelerate development of the projects which will satisfy the growing needs resulting from changing requirements in the North.

The Arctic Transportation Agency office in Yellowknife, NWT maintains close contact with the territorial governments and

organizations in the North. It responds to various requests for assistance and support concerning the Ministry of Transport's role in the Arctic.

The Ministry of Transport program for the Territories, which is implemented by the appropriate administrations in the Ministry, and other agencies which have the technical and operational responsibilities, involves expenditures of approximately \$30,000,000 a year and revenues of approximately \$7,000,000. In view of recent developments, the Agency is accelerating the projects which will satisfy the growing needs resulting from the changing requirements. To this end, capital funding has been greatly increased since 1972.

An intermodal study is under way to examine transportation in the North on an integrated basis which should result in the optimum use of all modes, and ensure that future government programs will reflect the mix of modes which will prove to have the greatest cost benefits to the northern residents. In this and similar studies, the Arctic Transportation Agency makes full use of the consultative approach, soliciting views of the carriers, other government departments, the public, boards of trade, transportation associations, territorial governments and, most important, the users themselves.

The Government's participation in the development of a lead/zinc mine at Strathcona Sound was approved by Cabinet on March 28, 1974 on the basis of the mine's contribution to the economic and social development of Baffin Island. In return for an 18 per cent equity interest in the Mining Company, the Government is to provide an airport, a dock, roads, and townsite infrastructure. The Ministry of Transport commenced construction of the airport and the dock in 1974-75, with total estimated costs

of \$3.5 million and \$3.8 million respectively.

Air

The comprehensive policy to upgrade airports and air navigation facilities and services in the Canadian Arctic, approved by Cabinet in February 1974, is being implemented. The program involves an overall expenditure of approximately \$60 million to be spread over a period of five or six years. Of this total, some \$40 million is to be devoted to community airstrips. The outlay during 1974-75, the first year of the program, was around \$5.3 million, and it is anticipated that more than \$10 million will be spent on such facilities during the 1975-76 fiscal year.

An important part of the program is the training of residents of the smaller remote communities to undertake the responsibility for operating and maintaining the airport and associated facilities and services. These include the operation of vehicles for summer and winter maintenance of runways and aircraft parking areas, communications services and meteorological observing responsibilities. It is anticipated that the improved terminal facilities and navigational aids, together with radio communications and meteorological services, will result in a more reliable air service for the smaller communities in the North.

A study of air services in the North is well advanced. Extensive consultation with government agencies, carriers and Northerners will continue. A number of alternatives are being assessed with a view to alleviating some of the problems which have been identified. A communications program is also under development to provide Northerners with clear, factual information on many aspects of air transport.

Marine

The Arctic Transportation Agency works with other government departments to improve the annual eastern Arctic resupply, on which remote communities in the North depend. In 1975, six communities on the west coast of Hudson Bay in the Keewatin district will be resupplied by the Northern Transportation Company from a base at Churchill, Manitoba, using a tug-barge system.

For the remainder of the eastern Arctic, the Ministry of Transport has obtained a five-year mandate to co-ordinate the annual resupply of the communities and Federal Government activities. This will enable resupply contracts to be awarded on a multi-year basis where this would be beneficial.

The Agency has completed an economic analysis of improving the Mackenzie River System by deepening the channel at selected points to increase permissible vessel draft, and also to provide channel re-alignments. Comments from operators are now awaited.

The Agency is preparing a study of Arctic marine facilities requirements, similar to that already completed for the air mode, with the intention of developing relevant policy.

CANADIAN AIR TRANSPORTATION ADMINISTRATION

Two directorates Airports and Construction and Civil Aeronautics provide safe and efficient facilities and services in support of air transportation.

CIVIL AERONAUTICS

Responsibilities

The Civil Aeronautics Directorate of the Canadian Air Transportation Administration, plans, co-ordinates, and directs all activities relating to the control and orderly development of civil aeronautics in Canada. These activities include developing and enforcing legislation, standards and regulations through licensing and inspection; providing electronic and telecommunication services and systems in support of civil aeronautics and other administrations and departments; designating airspace and the operational control of aircraft, investigating aircraft accidents and doing research into the development of improved aviation systems; improving security; and providing government flight services. A major objective of the Directorate of Civil Aeronautics is the optimum utilization of present and future

resources in the development and operation of the airspace of Canada. The two main components of the airspace system are the airspace structures which are based on the deployment of electronic aids to navigation and the air traffic services provided therein. A review of present and future systems and their deployment is now being conducted, with particular attention to the northern airspace of Canada.

TELECOMMUNICATIONS AND ELECTRONICS — AIR

Communications

Review of 1974-75

In support of northern aviation and in order to extend VHF ground-to-air coverage, a VHF ground/air communications site was established on a mountain top near Whitehorse.

HF ground-to-air service using either AM or SSB on 5680 KHz is now available at most northern aeradio stations.

The Atmospheric Environment Service Automated Teleprinter network was extended via the ANIK Satellite to Trout Lake, Fort Chimo, Frobisher and Resolute. The Air Services Automated Data Interchange System was also extended via the same facility to Fort Chimo, Frobisher, Coral Harbour, Baker Lake and Resolute.

Plans for 1975-76

Station renovations including the installation of modular communications control equipment will commence at Norman Wells.

The Atmospheric Environment Service Automated Teleprinter network will be extended to Cape Dorset, Baker Lake, Coral Harbour and Chesterfield Inlet. The Automated Data Interchange system circuit via ANIK will also be extended to Rankin Inlet. An Air Traffic Service Interphone circuit connecting Frobisher with Edmonton, Moncton and Gander Control Centres will become operational; in addition connection of Resolute to the same circuit will be attempted later in the year.

Some Arctic B & C airstrips will receive Unicom VHF communications equipment.

Long-term Plans

Aeradio stations in the Mackenzie Valley and Arctic Archipelago are experiencing increased traffic handling due to oil exploration in that area. Large increases in traffic

handling are predicted and will require additional communications equipment.

Aeradio operations in Dawson City will soon be relocated to a new terminal building. Relocation of the aeradio station from Chesterfield Inlet to Rankin Inlet will commence in 1976-77, and in 1977-78, aeradio facilities at Hall Beach will undergo an expansion.

The Atmospheric Environment Service intends to extend their Automated Teleprinter network service to a great many northern communities either by employing conventional teleprinter equipment or automatic reporting stations. As passenger traffic is increasing in the North, communications equipment for passenger screening and airport security is expected to increase considerably.

Arctic B & C airstrips will receive Unicom VHF communication systems as well as HF radio systems for Atmospheric Environment Meteorology use.

Navigation Air Facilities

Review of 1974-75

VOR/DME VHF omni-ranges with distance measuring equipment were installed at Norman Wells, Fort Simpson and Footner Lake. A VOR installation at Hall Beach is on test and another is partially completed at Baker Lake.

NDB Non-directional radio beacons were installed at Sachs Harbour, Slave Lake, Watson Lake, Coppermine and Sanikiluaq. The NDB at Contwoyto Lake was upgraded to 1 KW. A temporary NDB was installed at Strathcona Sound. The Hay River Glide Path was completed.

Plans for 1975-76

VOR/DME's will be installed at Wrigley, Watson Lake, Fort Good Hope and Hay River. The installation at Baker Lake will be completed and installation will start at Coral Harbour.

NDB Due to a restriction in funding, NDB's planned for 1975-76 will be postponed.

VHF—DF Very high frequency-direction finders are planned for Frobisher, Watson Lake, Norman Wells, Fort Simpson, and Hay River.

OMEGA The program of monitoring and recording propagation characteristics of Omega Navigational Systems in the North will end.

Long-term Plans

New or additional navigational aid facilities are planned at Norman Wells and Watson Lake, 1976-77; Fort Simpson 1977-78; Fort Smith 1978-79; and in future years at Hall Beach, Rankin Inlet, Resolute, Burwash and Cambridge Bay.

Air Traffic Services

Review of 1974-75

Air Traffic Services continued to provide area control service for flights operating under instrument flight rules in the Arctic Control Area of Canada. This area extends basically from 72° north to the geographical North Pole at and above flight level 290. The service provides protection and separation for commercial carriers operating between Europe and the Orient that stage through Alaska; also a service to domestic flights operating north/south into and out of the Arctic Islands. In support of this service, ATS operates a discrete telephone circuit from the Edmonton ACC to Cambridge Bay, NWT, with switching arrangements at this point into the Sondrestrom ACC in Greenland and with the Anchorage air route traffic control centre in Alaska.

In the Northern Control Area of Canada, area control service was provided for all flights operating at flight level 230 and upwards. Flights which benefited from this service were commercial operators, operating between Europe and western North America, and domestic carriers and operators flying in Northern Canada.

A major restructuring of the Southern Control Area was made to extend the northern boundary to a line roughly north of Inuvik, Yellowknife, Churchill and Frobisher. In addition, changes were made to the Area of Compass Unreliability and the Altimeter Setting and Standard Pressure Regions. The base of the Southern Control Area was lowered to flight level 180 to provide additional area control service.

In the low-level airspace, controlled airways are designated from Yellowknife to Inuvik, along the Staging Route to Alaska, and from Goose Bay to Frobisher. North of 30° latitude, Control Area Extensions were provided at:

Fort Smith
Hay River

Yellowknife
Fort Simpson
Norman Wells
Inuvik
Whitehorse
Watson Lake
Teslin
Frobisher

Control Zones for additional protection and improved service to the operators were provided at the following airports:

Fort Simpson
Norman Wells
Watson Lake
Positive Control Zones are available at:

Inuvik
Yellowknife
Whitehorse

Aerodrome Traffic Zones for the additional protection of aircraft operating at an uncontrolled airport are in effect at:

Cambridge Bay
Fort Resolution
Resolute
Wrigley

Airport Control Towers remained in operation at Yellowknife, Inuvik and at Whitehorse.

An air-transportation Airport Control Tower is being held in Edmonton Regional stores, in order that ATS can meet sudden demands for airport control services in Northern Canada.

Centre peripheral VHF facilities were available at Saglek, Fort Nelson, Whitehorse and Inuvik.

Two additional high-level airways were designated to improve service for aircraft flying from New York and Chicago to Alaska.

The Arctic Track System and the Northern Track System continue to provide an improved service to international aviation in the North.

Plans for 1975-76

With the phaseout of the United States Air Force Polevault North tropospheric scatter system on the east coast of Labrador planned for July 1, 1975, action was taken by Air Traffic Services to restore ATS communication into Frobisher of the ANIK Telesat communications satellite. This will provide Edmonton and Moncton Area Control Centres with a dedicated voice communication circuit into Frobisher Aeradio Station for control purposes.

AIRPORTS AND CONSTRUCTION SERVICES DIRECTORATE

Responsibilities

The Airports and Construction Services Directorate, CATA, plans and co-ordinates all activities relating to airport operations, services and facilities. These include the development of policies and guidelines regarding security and operation of airports, development of policies and standards for the planning, design, construction and maintenance of airport facilities, provision of financial and advisory assistance to Community Airports, provision and engineering and architectural support in respect of off airport CATA installations to other elements of the Ministry of Transport and other Federal and Territorial Government organizations. This Directorate is also responsible for all major construction and for providing design packages for projects undertaken by the Regional Administrators.

Review of 1974-75

The Arctic Transportation Policy to upgrade airports and related facilities was approved by the Cabinet in February 1974.

The Arctic program involves the expenditure of approximately \$60 million, to be spread over five years. Over \$40 million is required for the development of community airports in the North.

Arctic Airport Program — MOT/DND Agreement

The terms of reference concerning this Program contained in a Memorandum of Understanding (MOU), was approved and signed by the Deputy Ministers of the Department of National Defence (DND) and the Ministry of Transport (MOT) in August and September 1974 respectively, replacing a previous MOU—DIAND, DND and MOT. Under this agreement, DND will participate in the Arctic Airport Construction Program and the terms of reference setting out the allocation and implementation of responsibilities were agreed to. The Ministry of Transport is responsible for the funding and the program management of the airports being constructed.

Strathcona Sound Project

Development of an Arctic "B" type airport at an estimated cost of \$3.515 million is under way. Contract for the construction of the facility with the mining company (Nanisivik Mines Ltd.) and the

Ministry of Transport has been completed. The work is being supervised by the Central Region.

Whitehorse, YT — Escarpment program and security fencing was commenced in 1974.

Plans for 1975-76

A training program has been formulated in conjunction with the Territorial Governments of the Yukon and NWT, for the training of local residents of remote communities to take over the operations and maintenance of airport facilities and services.

Coppermine—Runway improvements and extension in cooperation with the community, the Gulf Oil Corporation and MOT are being initiated by all the agencies.

Hall Beach Airport

MOT takeover of this airport facility and related services from the Dew Line operators (USAF) is scheduled for July 1975.

Resolute—Extension of runway 10-28 has been completed to 4,000 ft. Fuel spill contingency plan prepared in co-ordination with the Imperial Oil Co. and other administrations has been completed but not tested for effectiveness.

Upgrade the petroleum oil lubricants system.

Long-term Plans

To improve and upgrade the existing facilities in the North, to meet the future need for airport facility requirements consistent with the aviation and air transportation needs in the Arctic.

Guideline for the provision of land reserves in the Arctic and the Yukon for the development of Airports has been completed with publication pending conversion of scale to metric system.

CANADIAN MARINE TRANSPORTATION ADMINISTRATION

Marine Services

Responsibilities

To carry out and co-ordinate the delivery of cargo and passengers for the Canadian Government, USAF and Canadian commercial interest; to provide ice- and routing information and, when necessary, to provide icebreaker support for vessels of all kinds including drilling rigs navigating Arctic waters and Hudson Bay; to carry out

environmental research and surveys as requested by other government agencies; to instal, operate and maintain marine aids to navigation; to carry out marine search and rescue operations; to administer the Navigable Waters Protection and Arctic Waters Pollution Prevention Acts.

Review of 1974-75

During the 1974 navigation season the Ministry of Transport deployed five heavy and four medium displacement icebreakers to provide assistance to commercial ships operating in eastern Arctic waters. Additionally two northern supply vessels, were seconded for Arctic operations.

CCGS Narwhal was formerly employed as a mobile stevedore depot; but because of changes in stevedore arrangements during the 1972 sealift; the ship was able to be employed on a hydrographic program in Hudson Bay and Chesterfield Inlet during the 1974 season.

Although the primary function of the Canadian Coast Guard icebreaking fleet was to ensure that icebreaker support was available to marine interest, *CCGS Louis S. St. Laurent*, *CCGS John A. Macdonald*, *CCGS Norman McLeod Rogers* and *CCGS Labrador* were, on an opportunity basis, engaged in hydrographic surveys as a supplement to their primary assignment. The surveys were to verify soundings obtained during the previous winter through the ice, by the Canadian Hydrographic Service. These four ships obtained profiles of proposed pipeline routes and verified existing reconnaissance data. Furthermore they gathered data in various uncharted areas of the Arctic.

A dual draft buoy/supply vessel, *CCGS Nahidik*, was commissioned in July at Vancouver and sailed around Point Barrow to the western Arctic in late August. The vessel's home port is at Hay River in the Northwest Territories, and she maintains buoys and other navigation aids on the Mackenzie River and the Beaufort Sea. A wharf was constructed for her use at Tuktoyaktuk in 1974. *CCGS Nahidik* is also available as a Canadian Coast Guard vessel for search and rescue work in this remote area.

During August 1974 *CCGS Wolfe*, was fitted with a new concave icebreaking bow. The purpose of this alteration was to upgrade the icebreaking characteristics of the ship and, therefore, improve her performance in ice. *CCGS Wolfe* will be assigned to support the 1975 Arctic Sealift

operations, and at that time additional trials will be conducted towards evaluating the new bow with a view to installing concave bows on other ships of her class.

One notable event was the support provided by Canadian Coast Guard icebreakers towards escorting an ice-reinforced semisubmersible drilling rig, *Pentagone 82*, and its support vessels through Hudson Strait to central Hudson Bay. The drilling rig was contracted for use by Aquitaine Company of Canada and was towed to Hudson Bay from the North Sea. The *Pentagone 82* entered Hudson Strait on July 11 escorted by *CCGS Labrador* and was on station in central Hudson Bay throughout the summer. The drilling rig cleared Cape Chidley outbound on October 28 under escort of *CCGS John A. Macdonald*.

More than 2,800 navigational aids were serviced and maintained in the eastern and western Arctic during the 1974-75 season. This total represents an increase of more than 100 aids of various types over the previous year. These aids include lighted and unlighted buoys, and shore aids, racons, radio beacons and radar beacons. The loss of aids on the Mackenzie River due to the early freeze up totalled more than \$200,000.

The Marine Services Base at Hay River was expanded with the addition of shops and a helicopter maintenance facility.

During the 1974 Arctic resupply operation, delivery of the dry cargo was on a weight/measurement basis and delivery of the bulk petroleum products was made by two tankers on time charter. A third tanker was chartered to transport bunker fuel to the Canadian Coast Guard Icebreakers in the High Arctic, however due to the strike by deck and engineer officers it was impossible to effect delivery and the assignment was cancelled.

In addition to the Canadian Coast Guard ships, 15 commercial vessels were engaged and more than 60 northern settlements were served by the vessels. Approximately 63,000 short tons of cargo was delivered, of which 75 per cent was bulk petroleum products and the remaining 25 per cent dry cargo.

Ten coast stations in the Arctic and Hudson Bay provided a marine communication safety and public correspondence service to ships in these waters. Through the intermediary of Telesat Canada's ANIK Satellite Service the Ministry's coast stations at Resolute, in the Northwest Passage, and Coral Harbour on Southampton Island at the head of Hudson Bay are now providing a Marine Telephone service. The first marine

telephone call through Resolute came in August when the *Imperial Bedford*, an oil tanker owned by Imperial Oil Limited, was connected to Imperial Oil's Toronto office.

Plans for 1975-76

Some clean-up dredging will be done at the recently completed wharf at Tuktoyaktuk and an extension will be added to the existing wharf at Hay River.

It is planned to re-engine the *CCGS Echalo* to provide slightly more power so that she will be able to navigate most currents on the Mackenzie River.

A start will be made on a VHF-FM relay communications system for the Mackenzie River and the navigational requirements for the Liard River will be evaluated.

It is anticipated the *CCGS Nahidik* will be involved to some extent on the Beaufort Sea project.

The coast station operation at Resolution Island will be relocated to Port Burwell, NWT and will be in operation from the new location for the 1975 navigation season.

Long-term Plans

To meet the growing requirements of marine activity for icebreaker support in the Canadian Arctic, the Ministry of Transport has requested and received program approval for the construction of two heavy icebreakers with a capability equivalent to, or better than, *CCGS Norman McLeod Rogers*. The construction of these two heavy icebreakers will alleviate the situation in the Arctic and the Great Lakes during the summer months, and in Gulf of St. Lawrence during the winter.

The Ministry of Transport has awarded a design study for icebreakers with polar capability. These icebreakers, should they be constructed, will significantly extend the season throughout the Arctic Archipelago and should provide a 12 month capability in Lancaster Sound as far west as Melville Sound.

It is planned to replace the *CCGV Dumit* and *CCGV Miskinaw*, a barge-tug combination, with a buoy tender similar to the *CCGV Tembah*.

Long-term plans call for upgrading crew accommodation on Coast Guard vessels carrying out lengthy assignments in the North and provision of helicopter landing facilities on all vessels.

An approved four-year program will provide improved short-to-medium range ship/shore radio communications from a

new station at Clyde River and through peripherals remotely controlled over ANIK-derived circuits from Coral Harbour and Resolute coast stations. With the addition of improved facilities wide-area ship/shore radiotelephone communication coverage from Frobisher will be realized. On completion of this program, ships sailing Arctic waters will have good communications both to points within the Arctic and to southern points over the communications links provided by CNT in the West and Bell in the East which connect our stations to the telephone and telex networks.

CANADIAN SURFACE TRANSPORTATION ADMINISTRATION

Responsibilities

The Canadian Surface Transportation Administration exists, essentially, to foster the optimum development of the national surface transportation system, and, where required, to provide facilities and services, consistent with safety and the protection of the environment, on a cost-recoverable basis to the maximum extent practicable.

Railway Branch

Responsibilities

It is responsible for formulating policy proposals and ensuring that the operation, planning and regulation of railways are consistent with national needs and government policy. Further duties involve planning and implementing railway programs consistent with such objectives, providing government with railway information and conducting liaison with industry and provincial governments. The Branch is also responsible for ensuring that adequate resources are available for continual improvement of the railway system.

Review of 1974-75

A Yukon railway planning study, covering two related areas of interest, is currently being carried out. One analysis involves an assessment of a rail extension north from the present railhead at Whitehorse, while the other analysis will contribute towards a longer range rail development strategy for the entire area. CN-CP consultants have been engaged to carry out this work, and the report is to be completed by the fall of 1975.

Highway & Motor Carrier Branch

Responsibilities

It is responsible for developing a methodology for the evaluation of federal and provincial highway programs. The Branch negotiates and manages cost-shared highway programs and studies their inter-relationship with other modes of transportation. It participates in the development of federal policies affecting the motor carrier industry and maintains close contact with it and provincial counterparts. The Branch also heads the Federal-Provincial Committee on the Carriage of Dangerous Goods by Motor Vehicles and participates in federal-provincial, interdepartmental and international motor carrier organizations.

Review of 1974-75

The main objective of highway development in the Territories is to construct road links to support developmental activities. To this end, the Highway Branch has participated in a number of interdepartmental and intra-ministerial discussions on the subject of highway facilities in the North.

Discussions are being held with the U.S.A. to establish an agreement for the reconstruction, paving, and extension of the Canadian section of the Haines Road and the Alaska Highway from Haines Junction to the Yukon/Alaska border.

In addition, as part of an ongoing program of upgrading the Alaska Highway, 50 miles of road in the vicinity of Whitehorse are to be reconstructed by DPW, with MOT's support.

The Highway Branch is also participating in continuing economic studies relating to problems of ferry crossings and to the Mackenzie Highway. We are presently cost-sharing a research program by NRC south of Inuvik to examine insulating methods for highway construction on permafrost. The purpose of this study is to determine if polystyrene insulation can be substituted for the conventional thick layers of fill which often have to be transported over long distances. Depending on the results, savings in construction costs of northern highways could be substantial.

Surface Planning and Urban Applications Branch

Responsibilities

The development, implementation and monitoring of programs, including participation in policy formulation, involving urban

transportation and inter-modal aspects or elements of transportation not included in other surface transportation programs.

Review of 1974-75

The Planning and Urban Applications Branch commissioned a study to determine the feasibility of establishing a mini-bus transit system to serve the City of Whitehorse, Yukon Territory.

TRANSPORTATION DEVELOPMENT AGENCY

Responsibilities

To provide leadership and direction in research and development to all sectors of transportation in Canada.

Long-term Plans

To identify, through research and development activities, technology and operational improvements for existing Canadian transportation systems and requirements for new systems.

Review of 1974-75

Arctic Rail Study

The study, initiated in 1973, was completed this year and a report entitled *Arctic Oil and Gas by Rail* was published through Information Canada after a series of interdepartmental reviews. The study was conducted to determine the engineering feasibility and the cost of constructing and operating a year-round rail system to transport hydrocarbons along the Mackenzie Valley from Prudhoe Bay and the Delta to the southern limit of permafrost. The Report provides a comprehensive data base for comparing costs of transportation of hydrocarbons by rail and by other modes.

Transportation of Oil and Gas from the Arctic Islands

A report is in the final phase of preparation for distribution to ACND after completion of interdepartmental reviews last year. It presents the methods of analysis used in evaluating alternative systems for the transportation of oil and gas from the Canadian Arctic Islands and gives the results of some case studies to date. The Report also constitutes a working model for ongoing studies on the subject at TDA, which will monitor the state of technology as it is applied to the transport of oil and gas from the Arctic.

Transportation of Energy

TDA has been participating in the activities of the interdepartmental Task Force on Energy, Research and Development which was charged with reviewing the present federal energy, Research and Development activities and developing and implementing a co-ordinated federal energy-oriented R & D program. As the designated lead agency, TDA co-ordinated and formulated two energy-oriented transportation R & D programs. Within the context of the Transportation of Energy Program, four groups of projects related to Canada's energy resources in the North were identified and defined; the output of a further group of R & D activities could also be applied to the transportation of energy in northern regions. The initial effort of the Task Force culminated in the preparation of a memorandum to Cabinet on Energy Research and Development in Canada.

Air Cushion Vehicle (ACV) Icebreaking Capability

A theoretical study was initiated and completed as the first phase of an effort to better understand the phenomenon of ice-breaking under air cushion vehicles. A mathematical model, simulating conditions under a slowly moving vehicle, was constructed and preliminary testing of its predictive capability was carried out for a certain range of parameters.

ACV Cargo Handling Demonstration

This project was initiated to evaluate transport of cargo by ACV to remote areas of the lower north shore of the St. Lawrence in Quebec. The objectives were to determine: whether ACV's could provide adequate winter service in this environment; whether ACV's were capable of operating under commercial conditions and maintaining a schedule; and to derive the actual cost of transportation by ACV in point-to-point operations and in lightering. In addition to investigating technical features and operation in this environment, the economic and social aspects were also studied.

Investigation of Towed Air Cushion Raft System

A test project has been delineated to develop towed air cushion raft systems capable of carrying out complete transportation operations over sensitive terrain with low-bearing strength where the building of roads is uneconomical.

Plans for 1975-76

It is planned to give emphasis to projects related to the transportation of energy. Transportation of oil and gas from the Arctic will be further studies as the need for assessment arises and as more specific information regarding energy resources in the Arctic becomes available. Further participation on the Task Force on Energy R & D will involve reassessments of the already delineated transportation R & D programs and evaluation of priorities to respond effectively to the energy situation as it evolves. This may lead to the initiation of some specific transportation R & D project related to northern regions.

It is envisaged that preliminary activities related to the transportation of other resources from the Arctic will take place in cooperation with other interested departments. Experimental projects directed towards investigating ice pressures on marine structures will also be initiated. Further effort in the field of ACV technology will involve extending the theoretical studies of icebreaking to a range of critical velocities (where maximum icebreaking performance was observed). The ACV cargo-handling demonstrations will be completed and evaluated, and the towed air cushion raft project will be implemented. Finally, system analysis of the use of STOL in non-urban environments, such as the Arctic, may be included in TDA's STOL program.

UNEMPLOYMENT INSURANCE COMMISSION (UIC)

Responsibilities

The UIC is responsible for administering the Unemployment Insurance Act and for providing benefits to unemployed workers under the provisions of the Act. The district office in Prince George, BC, and an office in Whitehorse serve the Yukon Territory; the district office of Edmonton North serves the districts of Mackenzie and Franklin, excluding Baffin Island, in the Northwest Territories. The district offices of Winnipeg and Montreal East serve the districts of Keewatin and Baffin Island respectively.

Review of 1974-75

Throughout 1974, UIC offices in the Yukon and Northwest Territories provided a faster and more personalized service to the people of their communities.

The Yukon

The Whitehorse office retains claimants' files for easy reference and prompt adjudication, and provides information to claimants on their rights and obligations. It consists of an officer-in-charge, three insurance agents and two clerks. Supplementary personnel is added at times of heavy claim-load.

During 1974, the office processed 3,638 claims. The population of the Yukon Territory is approximately 20,000.

At the end of September, 1974, the Whitehorse office moved to its existing location within the city to provide better service through closer proximity to the Canada Manpower Centre (CMC).

The UIC has representatives on the joint federal and territorial government Manpower Needs Committee, which evaluates training and manpower requirements for the area.

District of Mackenzie

This district is served by an enquiries officer in Yellowknife and by a UIC-trained Canada Manpower clerk at Inuvik (both major centres in the district).

A proposal to introduce a special service unit for the Mackenzie District in the Edmonton district office is under consideration.

As of January 7, 1975, the District of Mackenzie had a population of 27,808, a labour force of 21,551 and 615 persons on claim with the UIC.

District of Keewatin

In the latter part of 1974, the Winnipeg District Office met with representatives of the NWT. Government in Rankin Inlet, to discuss ways and means of improving service and the flow of information to the District of Keewatin. Although the problem of representation for settlements in the area was not immediately resolved, a working paper on northern service was prepared by UIC's Prairie Region early in 1975. It states that claimants in northern areas should be served by a special service unit that would be more familiar with their socio-economic climate. This proposal was accepted and a special unit was established in the Winnipeg District Office. Early indications are that this unit is working extremely well, both from the Commission's point of view and from that of the District of Keewatin field workers.

As of January 7, 1975, the District of Keewatin had a population of 3,403, a labour force of 594 and 63 persons on claim with the UIC.

District of Franklin — Baffin Island

The District of Franklin has a population of 7,747 according to the last census taken in 1971. During 1974, there were 853 persons on claim with the UIC.

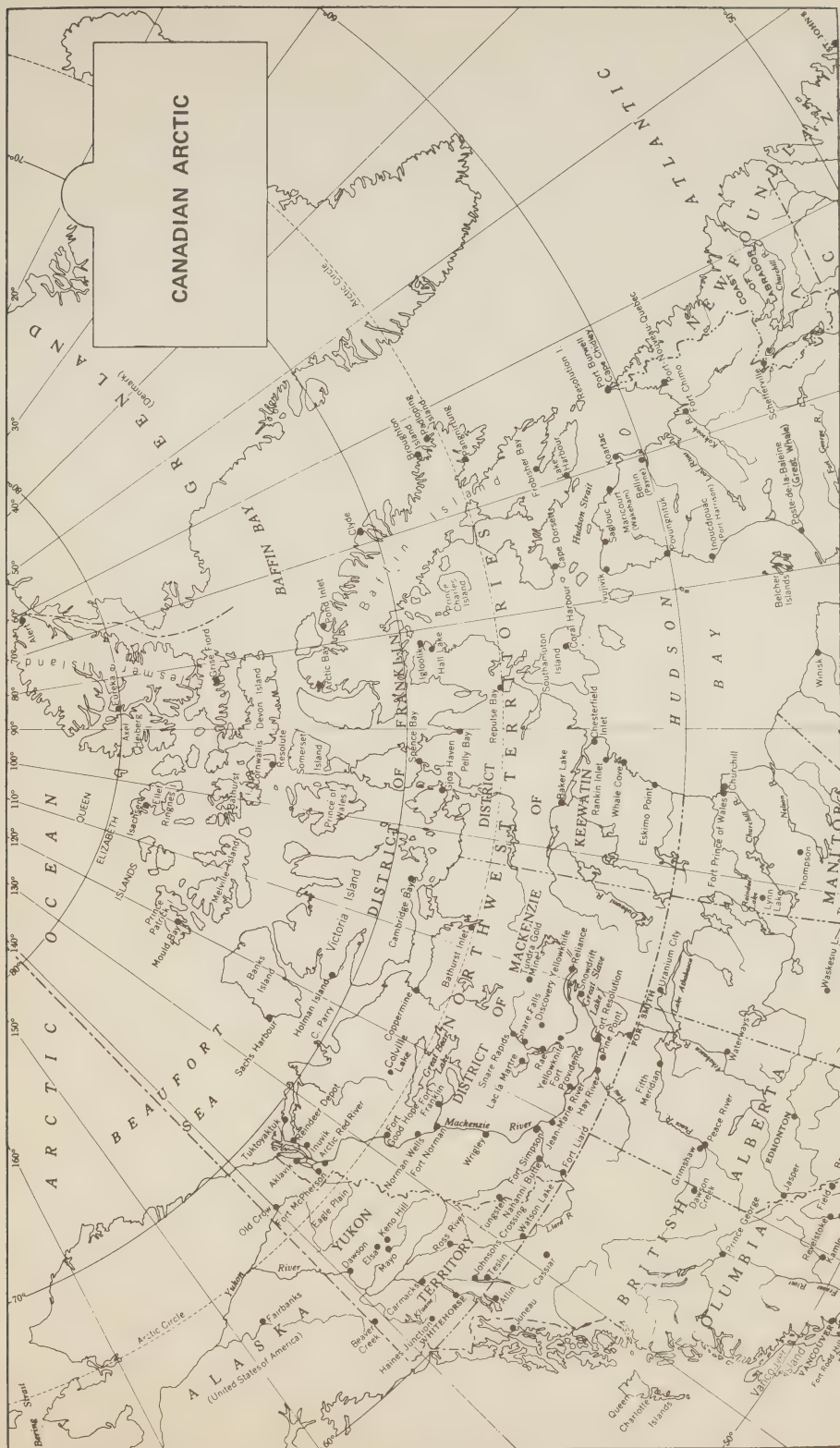
The service of Frobisher on Baffin Island has an officer who gives advice and guidance to claimants completing applications for benefit. Baffin Island is part of the District of Franklin and is administered, for unemployment insurance purposes, from the Commission's Montreal East office.

Plans for 1975-76

As the existing service is adequate in these northern communities, there are no immediate plans for expansion. Nevertheless, the Commission monitors its northern operations constantly to ensure that clients are offered the best possible service.

Long-term Plans

The Commission's long-term plans are to increase contact with territorial governments and settlement agents in order to improve UIC services in the area.



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